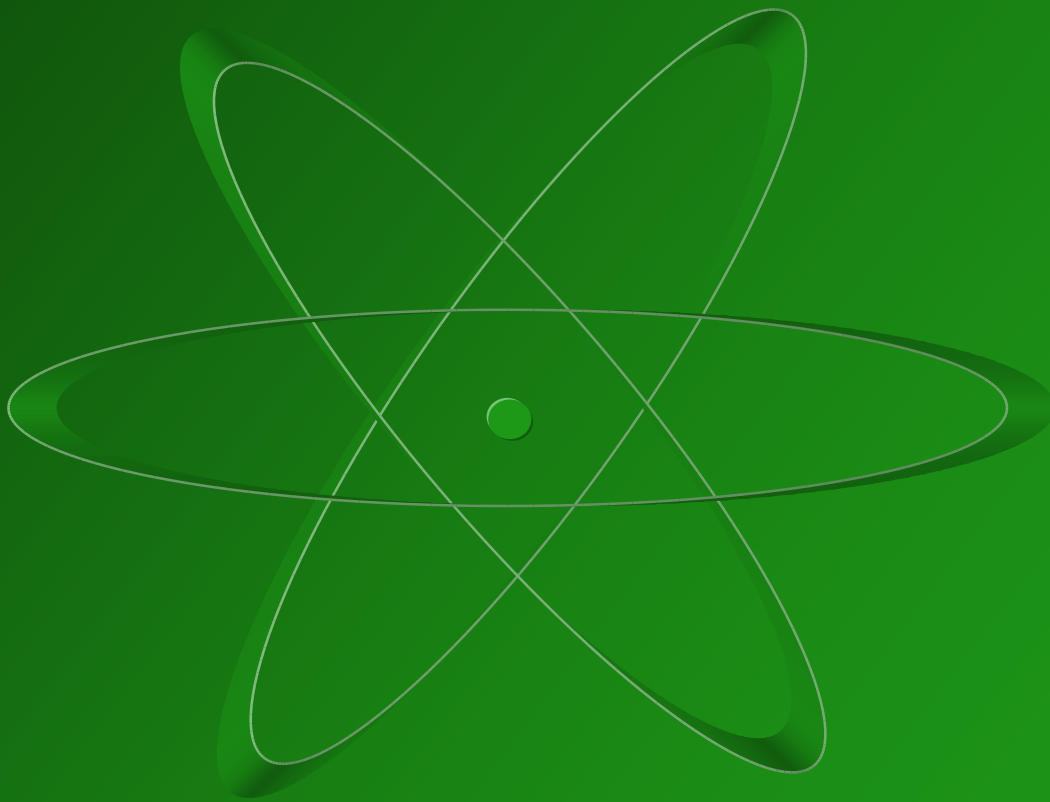


South Carolina Office of Regulatory Staff

Report on South Carolina Electric & Gas Company's Annual Request for Revised Rates

Docket No. 2011-207-E



August 1, 2011



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Introduction

Pursuant to the Base Load Review Act (“BLRA”), South Carolina Electric & Gas Company (“SCE&G” or “Company”) may request to revise rates no earlier than one year after the request of a Base Load Review Order or any prior revised rates request. SCE&G filed its Annual Request for Revised Rates (“Request”) with the Public Service Commission of South Carolina (“Commission”) on Friday, May 27, 2011 in Docket No. 2011-207-E. The Request was made effective on May 30, 2011, the anniversary date of SCE&G’s previous request for revised rates.

In accordance with the BLRA, the South Carolina Office of Regulatory Staff (“ORS”) has two months to review SCE&G’s Request and file with the Commission a report indicating the results of its examination. ORS’s review of SCE&G’s Request focuses on the Company’s ability to adhere to the requirements of the BLRA and applicable Commission Orders. This report details the results of ORS’s examination.

On May 30, 2008, SCE&G applied under the BLRA to the Commission for a Base Load Review Order to construct and operate two 1,117 net Megawatt (“MW”) nuclear generating facilities, Units 2 & 3, (the “Units”) to be located at the V.C. Summer Nuclear Station site near Jenkinsville, South Carolina. On March 2, 2009, the Commission approved SCE&G’s request to construct the Units and the Engineering, Procurement and Construction (“EPC”) Contract. This approval can be found in Base Load Review Order No. 2009-104(A) filed in Docket No. 2008-196-E. On January 21, 2010, the Commission approved the Company’s request to update milestones and capital cost schedules in Order No. 2010-12, which is filed in Docket No. 2009-293-E. Most recently, on May 16, 2011, the Commission approved SCE&G’s petition to update capital cost schedules in Order No. 2011-345, which is filed in Docket No. 2010-376-E.

The anticipated dependable capacity from the Units is approximately 2,234 MW, of which 55% (1,228 MW) will be available to serve SCE&G customers. South Carolina Public Service Authority (“Santee Cooper”) is expected to receive 45% (1,006 MW) of the electric output when the Units are in operation, and is paying 45% of the costs of the construction of the Units. The two companies continue to operate jointly to construct the Units under the terms established in their Bridge Agreement.

SCE&G has disclosed that Santee Cooper is reviewing its level of participation in constructing the Units. On March 21, 2011, Santee Cooper issued a press release announcing it signed a letter of intent to negotiate a power purchase agreement with the Orlando Utilities Commission (“OUC”). This press release states that Santee Cooper is negotiating the sale of 10

to 20 percent of the capacity and output from Santee Cooper's ownership interest in the Units. According to this press release, the letter of intent also includes as part of the potential transaction an option for OUC's future acquisition of a portion of Santee Cooper's ownership interest. Additionally, on July 20, 2011, Duke Energy Carolinas, LLC issued a press release stating that it signed a letter of intent with Santee Cooper for a potential minority interest (approximately 10 to 20 percent of Santee Cooper's 45% ownership capacity of the Units). Lastly, on July 22, 2011, Santee Cooper issued a press release stating that it signed a letter of intent to negotiate a potential minority interest (roughly 5 to 20 percent of Santee Cooper's 45% ownership of the capacity and output of the Units) with the Florida Municipal Power Agency.

Revised Rates Background

Pursuant to Section 58-33-280 of the BLRA, SCE&G may file with the Commission annual requests for revised rates as long as the project is being constructed in accordance with the construction schedules and cumulative cost forecasts as approved by the Commission. Pursuant to the BLRA, until a nuclear plant enters commercial operation, the rate adjustments related to the plant include recovery only of the weighted average cost of capital applied to the outstanding balance of construction work in progress ("CWIP") and shall not include depreciation or other items constituting a return of capital to the utility.

The BLRA allows SCE&G to choose the date on which to calculate the outstanding balance of CWIP. SCE&G utilized the CWIP balance forecasted as of June 30, 2011. Exhibit C of the Request sets forth the capital structure and weighted average cost of capital. Exhibit D of the Request sets forth an increase in retail rates totaling \$58,537,000. It also shows the CWIP balance for the project, as of June 30, 2011 – which has not been reflected in retail rates – is \$484,712,000. The Company's Request shows the total CWIP for the project forecasted, as of June 30, 2011, to be approximately \$1.148 billion.

Table 1 shows the requested and approved increases from all prior Revised Rate Filings for the Units with the Commission.

Table 1:

| Requested vs. Approved Increases <i>SCE&G Revised Rate Filings</i> | | | | | | |
|--|------------------|---------------------------|------------------------|--------------------------------------|------------------------|------------------------|
| Docket No. | Order No. | Requested Increase | ORS Examination | Approved Increase¹ | Retail Increase | Rates Effective |
| 2008-196-E | 2009-104(A) | \$8,986,000 | (\$1,183,509) | \$7,802,491 | 0.43% | 4/1/2009 |
| 2009-211-E | 2009-696 | \$22,533,000 | \$0 | \$22,533,000 | 1.10% | 11/1/2009 |
| 2010-157-E | 2010-625 | \$54,561,000 | (\$7,260,000) | \$47,301,000 | 2.31% | 11/1/2010 |
| 2011-207-E ¹ | TBD | \$58,537,000 | (\$5,753,658) | \$52,783,342 | 2.43% | 11/1/2011 |

CWIP Review

ORS's examination was limited to the actual CWIP reported for the review period, July 1, 2010, through June 30, 2011, together with the associated revenue requirement and Allowance for Funds Used During Construction ("AFUDC") calculations. ORS also examined the Company's compliance with its agreement to permanently eliminate all expenditures related to Community Support/Outreach. The Company has also agreed to defer one half of its cost of the Combined License ("COL") Delay Study authorized in Change Order No. 11 to the EPC Contract. The ORS Audit Department did not examine or otherwise test any of the Company's projected results. The results of ORS's examination of the Request and the underlying financial records through June 30, 2011, are contained in Appendix A.

¹ The Request in Docket No. 2011-207-E was filed in May 2011 and has not been approved.

The purpose of ORS's Audit Department's examination was to verify that:

- The actual capital expenditures reflected in the Company's filing were complete, accurate, and supported by the books and records of the Company;
- Those actual costs were properly allocated between SCE&G and its co-owner, Santee Cooper, and accurately assigned to the cost categories set forth in the Base Load application;
- The Company's cost of capital as of June 30, 2011, was calculated accurately and supported by the books and records of the Company; and
- The Company's calculations of the AFUDC were accurate and properly reflected in the CWIP balance at June 30, 2011.

Summary of Expenditure Examination Procedures

The key audit steps performed are summarized below:

- Interviewed key accounting personnel within SCE&G New Nuclear Deployment, and reviewed the audit work papers from the prior request, to examine existing processes, and gain an understanding of any changes in the accounting team or new processes being performed.
- Toured the construction facility periodically during the review period to provide ORS with a visual frame of reference in conducting its examination.
- Obtained invoice-level listings of all charges to CWIP during the period.
- Selected samples of invoice items to test in detail, including inter-departmental cross-charges. Verified the mathematical accuracy of sampled invoices and related support, and verified that each was incurred during the review period.
- Ensured that the nature of each sample expenditure appeared to relate to the project, and that the amounts in question appeared reasonable.

- Scrutinized the CWIP expenses under the EPC contract (“EPC items”) to ensure the charges were approved by Company management prior to booking, and were coded into the appropriate construction cost categories as set forth in the base load review application. Base charges invoiced by the EPC vendors were verified against the EPC contract, and escalation amounts were recalculated for accuracy using the appropriate inflation indices.
- Obtained from the Company certain roll-forward and trend schedules; tested them to ensure the ending CWIP balance from June 30, 2010, together with incremental costs incurred during the review period, supported the reported balance at June 30, 2011, by total and by cost category.
- Verified that invoice items were accrued into the month incurred.
- Determined that the ending CWIP totals for each month reconciled properly to general ledger detail. For the quarter-end balances, ensured they agreed with the Company’s published Schedule 10-Q as filed with the United States Securities & Exchange Commission, (“SEC”) and with Form 1 as filed with the Federal Energy Regulatory Commission.
- Verified a sample of EPC items from each month to ensure that payment had actually been made to the vendor by examining bank drafts and wire transfer acknowledgements.
- Traced each invoice item to the PeopleSoft payment vouchers noting the required approvals were present. Also traced the EPC items to internal approval sheets signed by construction management.
- Performed a test of payroll costs charged to the project, noting that employees’ gross pay was supported by the payroll department records that their time appeared to be properly allocated to the project, and that charges reconciled to the general ledger detail.
- Recalculated the AFUDC for the test year using actual CWIP expenditures in lieu of the projected amounts reflected in the Company’s Application. Total AFUDC of \$18,527,000 was calculated for the period under examination.
- Analyzed the gross cost of capital rate.

Detail of ORS Appendix A

Revenue Requirement and CWIP through June 30, 2011

Appendix A shows the CWIP included in rates as of June 30, 2010, incremental additions to CWIP and AFUDC for the review period, and total CWIP as of June 30, 2011. Appendix A is designed to reflect “Revised Rate Filing” projected CWIP as compared to both the “Actual” CWIP per book amount, and the maximum “Allowable” CWIP. All amounts presented on Appendix A reflect the Company’s portion after applying the allocation with Santee Cooper.

Column (A) reflects Revised Rates Filing CWIP through June 30, 2010, of \$663,471,000, and incremental CWIP for the review period of \$484,712,000. Utilizing the resulting increase in the CWIP balance and the projected gross cost of capital, SCE&G’s projected incremental revenue requirement per the request was \$61,122,000 in total, or \$58,537,000 after applying the retail allocation factor of 95.77%.

Column (B) presents Actual CWIP through June 30, 2011, as verified by ORS examination, totaling \$1,100,237,000 before adjustment. Incremental Actual CWIP for the review period was \$436,766,000, before the deferral of \$41,000 related to Change Order No. 11. Total adjusted incremental CWIP for the review period ending June 30, 2011 is \$436,725,000.

Column (C) reflects the Allowable CWIP through June 30, 2011, computed as \$1,100,237,000, before adjustment. Incremental Allowable CWIP for the review period was \$436,725,000, net of Change Order No. 11 deferral. Utilizing the resulting increase in the CWIP balance and the gross cost of capital, the incremental, allowable revenue requirement is \$55,115,000 in total, or \$52,783,000, after applying the retail allocation factor of 95.77% (provided by the ORS Electric Department for rate design purposes).

Column (D) calculates the differences between Columns (A) and (B). The difference in incremental CWIP shown in the Revised Rates Filing figures versus the Actual column was \$47,987,000, indicating that the actual, audited CWIP per the Company books was less than the projected CWIP by that amount.

Column (E) calculates the differences between Columns (B) and (C). There are no costs to be carried over to the Company’s next Request.

Appendix A was prepared in accordance with recognized regulatory accounting practices and conforms to prior orders of the Commission.

Capital Structure

Section 58-33-280(B) of the BLRA states, “a utility must be allowed to recover through revised rates its weighted average cost of capital ... calculated as of a date specified in the filing.” Exhibit C of SCE&G’s Request shows the capital structure for the Company as of March 31, 2011 and adjusted for debt issuance and actual and planned equity transfers through June 30, 2011.

The filed capital structure’s two adjustments – one to Long-term Debt and one to Common Equity – reflect two actions planned to take place by June 30, 2011. The adjustment to Long-Term Debt was to show the effect of the known issuance of \$100,000,000 of SCE&G First Mortgage Bonds. The adjustment to Common Equity reflected the projected transfer to Common Equity from employee retirement and stock plans. Retained Earnings were already included in Common Equity.

Actual adjustments reflect the issuance of Long-Term Debt and additions to Common Equity from stock and 401(k) plans. The first adjustment is an addition of approximately \$100,000,000 to Long-Term Debt from the net proceeds of the debt flotation issued on May 17, 2011 at a rate of 5.45%. This adjustment adds Long-Term Debt to the filed capital structure in line with the filed adjustment. The second adjustment is an increase of \$36,646,190 to common equity arising from stock plans, including 401(k) employee plans and retained earnings. The impact of this addition to Common Equity is to raise the total in the Capital Structure to \$3,516,755,645.

Appendix B of this report shows the actual capital structure as of June 30, 2011. The adjusted Total Capitalization is shown as \$6,432,280,645, with a Net-of-Tax Rate of Return of 8.85% (Weighted Average Cost of Capital) and a Gross-of-Tax Rate of Return of 12.62%. Unlike the 2010 Request, capital structure includes \$100,000 in Preferred Stock, as SCE&G filed its capital structure. This is a token amount with a zero cost rate, held by SCANA, but with no return, for the purposes of maintaining certain reporting requirements to the SEC.

Rate Design and Allocation of Additional Revenue

Section 58-33-270(D) of the BLRA states, “In establishing revised rates, all factors, allocations, and rate designs shall be as determined in the utility’s last rate order....” ORS examined the Company’s proposed rate schedules in its Request and found the rate designs were consistent with those approved in the Company’s last rate order, which is Commission Order No. 2010-471 found in Docket No. 2009-489-E.

Section 58-33-270(D) of the BLRA also requires “... that the additional revenue requirement to be collected through revised rates shall be allocated among customer classes based on the utility’s South Carolina firm peak demand data from the prior year.” ORS verified that the Company used the summer firm peak demand day of August 13, 2010, along with the coincident class firm peaks, to determine the appropriate percentages upon which to allocate the additional revenue requirements. The firm peak demand was based on the approved four-hour coincident peak allocation methodology. The appropriate South Carolina retail firm demand allocation of the system total is 95.77% as shown on Exhibit B of SCE&G’s Request.

Revenue Verification

ORS verified that the corresponding approved rates for 2010 reflect actual revenues generated in the test year of 2010. ORS then utilized the most recent approved rates in effect at the time the Company filed its Request to obtain the most current annualized rate revenues. That is, ORS utilized SCE&G's rate schedules made effective in May 2011, which were subsequently adjusted for rate changes associated with SCE&G's Demand Side Management and Energy Efficiency Programs in June 2011 (Docket No. 2011-49-E) as well as the expiration of the \$25 million one-time credit in July 2011 (Docket No. 2009-489-E).

Additionally, ORS verified that the proposed revised tariffs in Exhibit F of SCE&G's Request generate the additional revenues totaling \$58,536,280 which is shown in Exhibit E of the Company's Request.² ORS's review determined the appropriate retail revenue target increase to be \$52.783 million instead of \$58.537 million as proposed by the Company and shown in Exhibit D of its Request. ORS's review reduced the Company's Request by \$5.754 million or 9.8%. The results of ORS's examination are shown in Appendix A. The total additional revenues of \$52,783,342 allocated by class are shown in Appendix C. Appendix C also includes the annual revenues generated under the currently approved rates and the incremental change by customer class. Since the general lighting schedules do not contribute to SCE&G's firm peak demand, those schedules of rates were not affected by the revised rates filing and received no increase in charges.

It should be noted that it is difficult to set rates to exactly produce precise dollar amounts due to the general complexity of rate designs of the various tariffs, their interdependent relationships, and the large number of billing determinants associated with these calculations. The commonly accepted practice is to adjust rates while maintaining the appropriate rate design and generate revenues close to the desired level without exceeding the targeted amount.

Based on ORS's review and a reduction of \$5.754 million to the Company's Request, the resulting overall increase to the retail class (excluding lighting) is 2.43%. Residential customers using 1,000 kWhs would see an increase of approximately \$3.23 in their average monthly bill. If the Commission approves the findings of ORS's examination, the Company would then apply the reduced revenue amount in like proportion to the Company's Request using the above criteria. ORS will then verify that these new rates generate the approved revenue increase.

² Exhibit G of the Company's Request provides general information based on internal financial reports to estimate future revenue requirements and rate increases. It does not contain information necessary to evaluate the revenue increase being considered in this filing. Therefore, ORS does not utilize Exhibit G of the Company's Request in its analysis and review.

ORS's Review of SCE&G's Quarterly Reports

As required by the BLRA, SCE&G must include its most recent quarterly report on the status of construction of the Units. Accordingly, SCE&G included its 2011 1st Quarter Report ("Report") which was filed on May 16, 2011. The Report is in Commission Docket No. 2008-196-E and covers the quarter ending March 31, 2011. The Report incorporates updated capital cost schedules per Commission Order No. 2011-345, which was also issued on May 16, 2011. Subsequently, ORS completed and produced a document describing its review of the Report. ORS's review of the Report is attached as Appendix D. ORS also included in Appendix D its prior reviews of SCE&G's quarterly reports since the last revised rates request.

With reference to Section 58-33-275(A) of the BLRA, ORS's review of the Company's quarterly reports focuses on SCE&G's ability to adhere to (1) the approved construction schedule and (2) the approved capital cost schedules. The following information summarizes ORS's review of SCE&G's Report:

Approved Schedule Review

The Commission established 146 milestone activities to monitor the status of construction of the Units. Based on these milestones, overall construction is considered to be on schedule if the substantial completion dates are not accelerated greater than 24 months or delayed more than 18 months. As part of its review of the approved schedule, ORS identifies Caution Milestones. Caution Milestones are those that have been delayed ten (10) months or greater. If any Caution Milestone is delayed sixteen (16) months or greater, ORS may issue a formal notification to the Commission of the delay. As of the end of the 1st Quarter of 2011, ORS identified two (2) Caution Milestones. No Caution Milestone had been delayed sixteen (16) months or greater.

SCE&G's Report indicates that overall construction is on schedule and does not identify any impact to Unit 2 and Unit 3's substantial completion dates of April 1, 2016 and January 1, 2019, respectively. However, the EPC Contract does not allow for any acceleration or delay in the substantial completion dates. The Company states in its Report that the current construction plan will not allow Unit 2 to be completed by the EPC Contract substantial completion date of April 1, 2016.

ORS's review of the approved schedule and the EPC Contract confirms that the project remains on schedule given the schedule criteria established in the Base Load Review Order. ORS also confirms that a condition of the EPC Contract may not be met. That is, the substantial completion date of April 1, 2016 for Unit 2 – as set forth in the EPC Contract – will

likely be delayed due to an expected delay by the Nuclear Regulatory Commission in the issuance of the COL for the Units.

Approved Budget Review

ORS's budget review includes an analysis of the 1st Quarter 2011 capital costs, project cash flow, escalation and AFUDC.

To determine how consistently the Company adheres to the budget approved by the Commission in Order No. 2011-345, ORS evaluates nine (9) major cost categories for variances. ORS monitors variances due to project changes (e.g., shifts in work scopes, payment timetables, construction schedule adjustments, change orders). At the end of the 1st Quarter of 2011, the total base project cost (in 2007 dollars) is \$4.270 billion. The Report shows the total base project cost has decreased by approximately \$103,000. This reduction reflects a decision by the Company that it would not seek recovery for \$103,000 in Community/Support Outreach costs that Westinghouse and Shaw have included in costs to be charged under the EPC Contract.

The Company's Report shows the cumulative amount spent on the project as of December 31, 2010 is \$861.183 million. The cumulative forecasted amount to be spent on the project by December 31, 2011 is \$1.324 billion. In its Report, the Company compares its current project cash flow to the cash flow schedule approved by the Commission in Order No. 2011-345. To produce a common basis for the comparison, SCE&G adjusts the approved cash flow schedule to reflect the current escalation rates. As of March 31, 2011, the comparison shows the cumulative project cash flow is forecasted to be approximately \$18.964 million under budget at the end of 2011. At the end of the project in 2018, the cumulative project cash flow is forecasted to be approximately \$8.903 million over budget.

The forecasted AFUDC for the total project as of the end of the 1st Quarter of 2011 is \$246.515 million and is based on a forecasted 5.87% AFUDC rate. This is a decrease of approximately \$9.169 million from the Company's 2010 4th Quarter Report.

The decline in the five-year average escalation rates reduced the projected project cash flow. Current worldwide economic conditions continue to reduce the projected escalation cost of the project. Primarily due to the decrease in escalation rates, the overall project is considered under budget. More specifically, as of March 31, 2011, the forecasted gross construction cost of the plant is \$5.624 billion as compared to the approved gross construction cost of \$5.787 billion, which reflects a decrease of approximately \$163.408 million.

Conclusions

The purpose of the BLRA is to provide for recovery of prudently incurred costs associated with new base load plants when constructed by investor-owned electrical utilities, while at the same time protecting customers of investor-owned electrical utilities from responsibility for imprudent financial obligations or costs. ORS reviewed SCE&G's Request and conducted an on-site examination of the Company's books and records regarding the Company's capital expenditures and found the expenditures to be prudently incurred.

Based on the information reviewed, ORS concludes: the project is being constructed in accordance with the construction schedules and cumulative cost forecasts approved in Commission Order Nos. 2009-104(A), 2010-12 and 2011-345; that the additional revenue requested by SCE&G should be reduced by \$5.754 million to reflect actual CWIP through June 30, 2011; and, the appropriate revenue increase is \$52.783 million.

Appendix A

Revenue Requirement and CWIP through June 30, 2011

South Carolina Office of Regulatory Staff
SCE&G - 2011 Revised Rates Filing
Construction Work In Progress (CWIP) through June 30, 2011
(Docket No. 2011-207-E)

(\$ in Thousands)

| Cost Categories | SCE&G Revised Rates Filing | ORS Examination | | | |
|---|----------------------------|-----------------|------------------|-------------------------|-------------------------|
| | | Actual | Allowable | Difference ² | Carry Over to 2011-2012 |
| | (A) | (B) | (C) | (D) (A - B) | (E) (B - C) |
| CWIP in Rates as of June 30, 2010 <i>Per Commission Order No. 2010-625</i> | \$ 663,471 | \$ 663,471 | \$ 663,471 | \$ - | \$ - |
| Incremental Actual Additions to CWIP through March 31, 2011 ¹ | \$ 331,105 | \$ 331,096 | \$ 331,096 | \$ 9 | \$ - |
| Incremental AFUDC through March 31, 2011 | \$ 12,697 | \$ 12,696 | \$ 12,696 | \$ 1 | \$ - |
| Incremental Additions to CWIP April 1 through June 30, 2011 | \$ 135,005 | \$ 87,143 | \$ 87,143 | \$ 47,862 | \$ - |
| Incremental AFUDC April 1 through June 30, 2011 | \$ 5,905 | \$ 5,831 | \$ 5,831 | \$ 74 | \$ - |
| CWIP as of June 30, 2011 | \$ 1,148,183 | \$ 1,100,237 | \$ 1,100,237 | \$ 47,946 | \$ - |
| Incremental CWIP before Adjustment | \$ 484,712 | \$ 436,766 | \$ 436,766 | \$ 47,946 | \$ - |
| Deferral of 1/2 of Change Order No. 11 <i>(COL Delay Study Costs)</i> | | \$ (41) | \$ (41) | \$ 41 | \$ - |
| Incremental CWIP, as adjusted | \$ 484,712 | \$ 436,725 | \$ 436,725 | \$ 47,987 | \$ - |
| Gross Cost of Capital | 12.61% | | 12.62% | | |
| Incremental Revenue Requirement | \$ 61,122 | | \$ 55,115 | | |
| Allocation Factor for Retail Operation | 95.77% | | 95.77% | | |
| Allocated Retail Revenue Increase | \$ 58,537 | | \$ 52,783 | | |

¹ Includes \$2,277,000 of costs approved in Commission Order No. 2011-345.

² SCE&G's May 27, 2011 Request utilized projected incremental CWIP amounts. ORS's examination reflects actual incremental CWIP amounts through June 30, 2011.

Appendix B

Capitalization Ratios and Cost of Capital

South Carolina Office of Regulatory Staff
SCE&G - 2011 Revised Rates Filing

Capitalization Ratios and Cost of Capital
As of June 30, 2011
(Docket No. 2011-207-E)

| Capital Cost Category | Amount | Ratio | Embedded Cost | Weighted Average Cost of Capital | Gross of Tax |
|------------------------------|-------------------------------|-----------------------|----------------------|---|----------------------|
| Long-Term Debt | \$2,915,425,000 | 45.33% | 6.27% | 2.84% | 2.84% |
| Preferred Stock | \$100,000 | 0.00% | 0.00% | 0.00% | 0.00% |
| Common Equity | <u>\$3,516,755,645</u> | <u>54.67%</u> | 11.00% | <u>6.01%</u> | <u>9.78%</u> |
| Total Capitalization | <u>\$6,432,280,645</u> | <u>100.00%</u> | | <u>8.85%</u> | <u>12.62%</u> |

Appendix C

Revenue Allocation

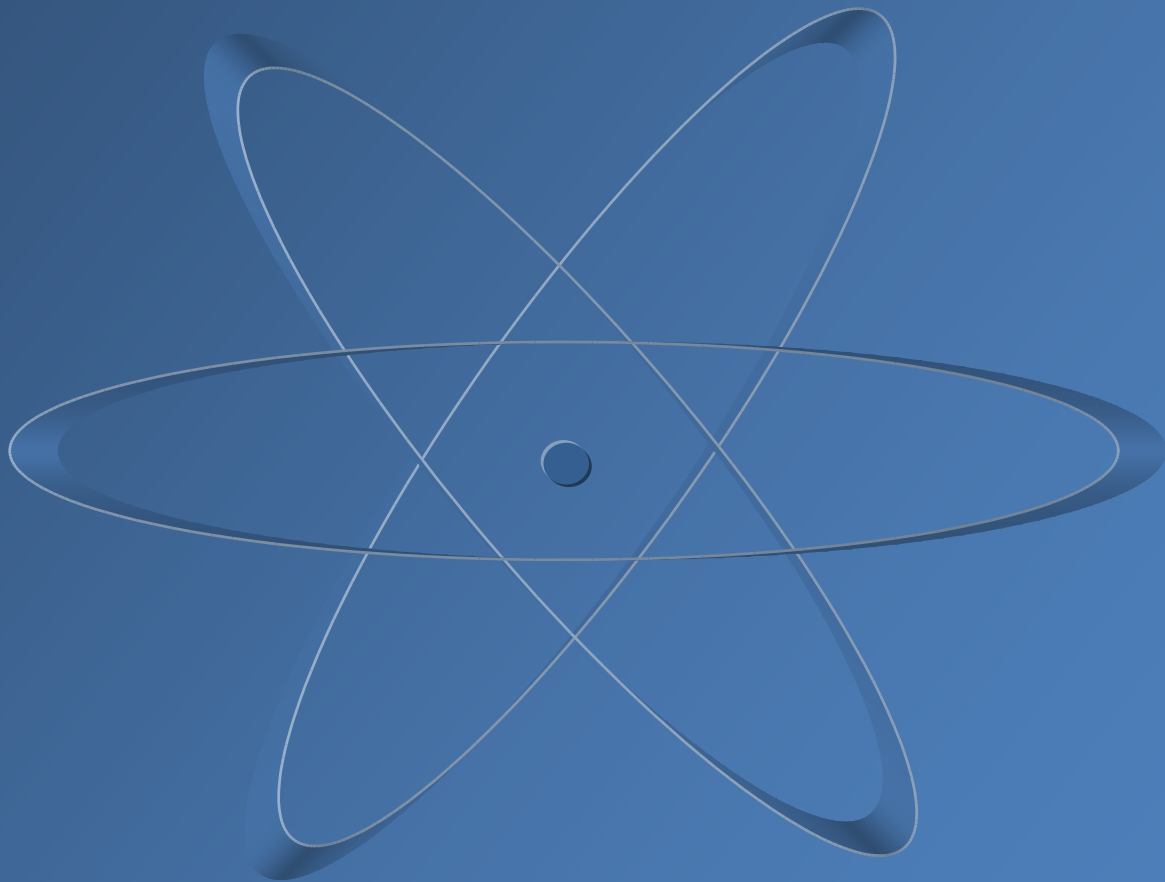
South Carolina Office of Regulatory Staff
SCE&G - 2011 Revised Rates Filing
Revenue Requirement
(Docket No. 2011-207-E)

| Rate Class | Order No. 2011-319 Annual Revenue | ORS Examination Annual Revenue | Incremental Change \$ | Incremental Change % |
|--|--|---|--------------------------------------|-------------------------------------|
| | (A) | (B) | (C) (B - A) | (D) (C / A) |
| Residential | \$ 984,630,062 | \$ 1,009,788,747 | \$ 25,158,685 | 2.56% |
| Small General Service | \$ 392,687,572 | \$ 402,130,408 | \$ 9,442,836 | 2.40% |
| Medium General Service | \$ 234,204,519 | \$ 239,838,958 | \$ 5,634,439 | 2.41% |
| Large General Service | \$ 558,579,068 | \$ 571,126,450 | \$ 12,547,382 | 2.25% |
| Retail Total (Excluding Lighting) | \$ 2,170,101,221 | \$ 2,222,884,563 | \$ 52,783,342 | 2.43% |

Appendix D

ORS's Review of SCE&G's Quarterly Reports

South Carolina Office of Regulatory Staff
Review of South Carolina Electric & Gas Company's
2010 2nd Quarter Report on
V. C. Summer Units 2 and 3
Status of Construction



October 1, 2010



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Appendices

Appendix A: *Detailed Milestone Schedule as of June 30, 2010*

Appendix B: *Construction Site Pictures*

Appendix C: *EPA Comments on Draft Environmental Impact Statement*

Appendix D: *NRC Progress Report Letter*

Introduction

On March 2, 2009, the Public Service Commission of South Carolina (“Commission”) approved South Carolina Electric & Gas Company’s (“SCE&G” or the “Company”) request for the construction of V.C. Summer Nuclear Station Units 2 and 3 (the “Units”) and the Engineering, Procurement and Construction (“EPC”) Contract. This approval can be found in the Base Load Review Order No. 2009-104(A) filed in Docket 2008-196-E. Subsequently, on January 22, 2010, the Commission approved updated capital cost estimates and construction schedules in Order No. 2010-12, which is filed in Docket 2009-293-E.

SCE&G and the South Carolina Public Service Authority (“Santee Cooper”) are co-owners of the project at 55% and 45%, respectively. ORS has no regulatory oversight of Santee Cooper. The two companies continue to operate jointly to construct the Units under the terms established in their Bridge Agreement. Negotiations continue between the two utilities to establish the terms of a final joint ownership contract. As mentioned in the South Carolina Office of Regulatory Staff’s (“ORS”) review of SCE&G’s 2010 1st Quarter Report, SCE&G has disclosed uncertainty as to Santee Cooper’s joint ownership. On September 18, 2010, The Post and Courier, a Charleston newspaper, reported in an article titled, “*Santee Cooper Might Seek Partner*” that Santee Cooper may seek a partner in its 45% ownership¹. The article indicated that Santee Cooper does not have a firm date for its decision, and as of this report, ORS has no further information regarding this matter.

On August 17th, SCE&G submitted its 2010 2nd Quarter Report (“Report”) related to its construction of the Units. The Report is filed in Commission Docket No. 2008-196-E and covers the quarter ending June 30, 2010. The Company submitted its Report pursuant to S.C. Code Ann. § 58-33-277 (Supp. 2009) of the Base Load Review Act (“BLRA”), which requires the Report to include the following information:

1. Progress of construction of the plant;
2. Updated construction schedules;
3. Schedules of the capital costs incurred including updates to the information required by Section 58-33-270(B)(5);
4. Updated schedules of the anticipated capital costs; and
5. Other information as the Office of Regulatory Staff may require.

With reference to Section 58-33-275(A) of the BLRA, ORS’s review of the Company’s Report focuses on SCE&G’s ability to adhere to (1) the approved construction schedule and (2) the approved capital cost estimates.

¹ <http://www.postandcourier.com/news/2010/sep/18/santee-cooper-might-seek-partner/>

Approved Schedule Review

Milestone Schedule

As of June 30, 2010, ORS verified that of the Milestone Schedule's 146 activities:

- 53 milestone activities are complete (includes 52 historical and 1 future milestone that was completed early)
- 93 milestone activities remain to be completed (includes 2 historical and 91 future milestones)

ORS also verified that during the 2nd quarter of 2010:

- Six (6) milestone activities were scheduled to be completed
 - Four (4) have been completed on schedule
 - One (1) has been completed 2 months early
 - One (1) is scheduled to be completed 1 month behind schedule

As of the end of the 2nd quarter of 2010 ORS verified that:

- None (0) of the milestones fall outside the deviation standards of being delayed up to 18 months or being accelerated up to 24 months.

SCE&G's Milestone Schedule attached to the Report indicates that overall construction is on schedule. ORS's review of the Milestone Schedule does not identify any issues that impact Unit 2 and Unit 3's substantial completion dates of April 1, 2016 and January 1, 2019, respectively. During the 2nd quarter of 2010, five of the six work activities scheduled to be completed during the 2nd quarter are complete. The remaining activity is one (1) month behind schedule due to supplier delay.

ORS reviewed the invoices associated with the milestones completed during the 2nd quarter and found the invoice amounts to be consistent with the EPC payment schedules. Appendix A shows details of the Milestone Schedule as of June 30, 2010.

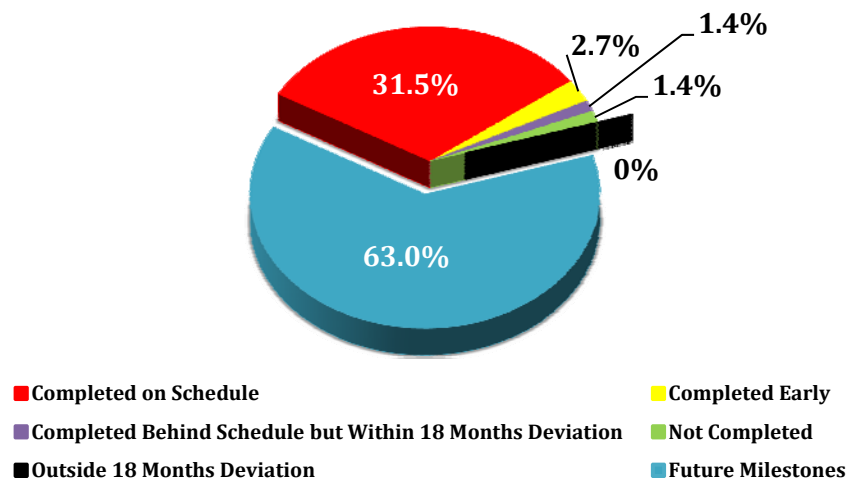
Table 1 and Chart 1 show the status of the 54 historical milestones.²

Table1:

| Historical Milestones <i>2nd Quarter 2010 and Prior</i> 54 of 146 total Milestones | | |
|---|-----------------|---------------------|
| | # of Milestones | % of All Milestones |
| Completed on Schedule | 46 | 31.5% |
| Completed Early | 4 | 2.7% |
| Completed Behind Schedule but Within 18 Months Deviation | 2 | 1.4% |
| Not Completed | 2 | 1.4% |
| Outside 18 Months Deviation | 0 | 0% |
| Total Historical Milestones | 54 | 37.0% |

Chart 1:

Historical Milestones
2nd Quarter 2010 and Prior



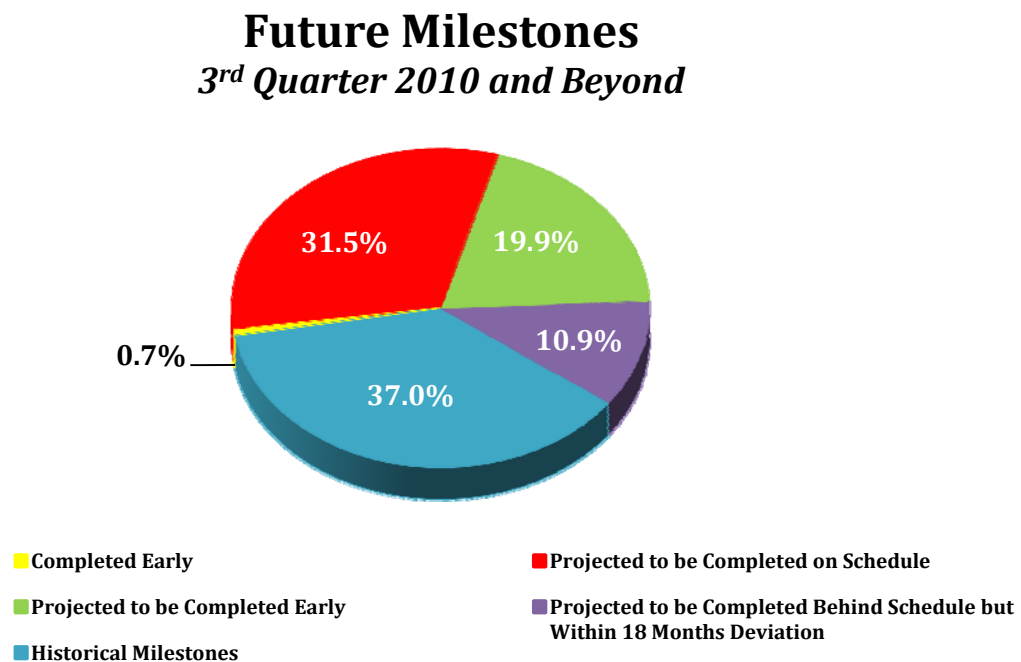
² The numbers reported by ORS and SCE&G will vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed July 2, 2010 and the actual completion date is June 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being done on schedule since it was completed within 30 days of the scheduled completion date.

Table 2 and Chart 2 show the status of the 92 future milestones.³

Table 2:

| Future Milestones <i>3rd Quarter 2010 and Beyond</i> 92 of 146 total Milestones | | |
|--|-----------------|---------------------|
| | # of Milestones | % of All Milestones |
| Completed Early | 1 | 0.7% |
| Projected to be Completed on Schedule | 46 | 31.5% |
| Projected to be Completed Early | 29 | 19.9% |
| Projected to be Completed Behind Schedule but Within 18 Months Deviation | 16 | 10.9% |
| Total Future Milestones | 92 | 63.0% |

Chart 2:



³ The numbers reported by ORS and SCE&G will vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed July 2, 2010 and the actual completion date is June 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being done on schedule since it was completed within 30 days of the scheduled completion date.

Specific Construction Activities

The overall site pre-construction schedule is progressing well. The major construction activities during the 2nd quarter of 2010 are listed below:

- The first of the critical path activities began in April with the excavation of the Nuclear Island for Unit 2, which will provide the foundation for the reactor. Because of the potential impact to the substantial completion dates, ORS closely monitors all critical path activities.
- Testing of the new design for the Shield Building, which will house the nuclear reactor, is complete. The test report was submitted to the Nuclear Regulatory Commission (“NRC”) for approval on May 30, 2010.
- Grading of the Switchyard is complete.
- Unit 2 power block excavation area – which includes the major structures such as the shield building, turbine building, control room, etc. – has begun and is progressing ahead of schedule.
- Warehouse Building 57 is near completion.
- Circulating Water Pipe installation for Unit 3 continues. The circulating water piping system provides a continuous supply of water between the Units and the Cooling Towers.
- Backfill for the Unit 2 Circulating Water System is ongoing.
- The Concrete Batch Plant, which makes concrete on-site, is nearing completion.
- The Mayo Bridge is in operation.
- Earthwork on the table top area – where the AP1000 Standard Plant units will be located – is nearing completion at the 400 foot elevation level.
- Excavation of the foundation for the Heavy Lift Derrick (“Bigge Crane”) continues.
- Steel is being erected for the Module Assembly Building which will be used to construct some of the major structural components of the Units.
- Construction continues on the Nuclear Learning Center expansion. V.C. Summer Unit 1 Nuclear Learning Center is also undergoing renovations to accommodate the AP1000 reactor operator training simulators.
- Earthwork grading is being performed in the Cooling Tower area.
- Construction of the 150,000 gallon Fire Suppression Tank is completed and was tested in June. Its primary purpose is to provide fire service water to temporary structures in Construction City.

Photographs of 2nd quarter construction activities are shown in Appendix B. Additional photographs of construction activities are available on Westinghouse Electric Company's ("WEC") website under the "News, Updates and Information" tab followed by the "Publications and Video" and "Westinghouse New Plant Update" links on <http://www.ap1000.westinghousenuclear.com>.

Change Orders

During the 2nd quarter of 2010, Change Order No. 5 was approved and Change Order Nos. 6, 7 and 8 were being developed. Change Order No. 5 modifies Change Order No. 1 by allowing additional instructor training.

Change Order No. 6 – approved subsequent to this reporting period – substitutes hydraulic nuts (HydraNuts) in place of the standard plant reactor vessel stud tensioners and conventional reactor vessel closure head nuts. This request provides standardization across SCE&G's nuclear fleet and increases the efficiency of reactor vessel maintenance activities.

Change Order No. 7 – approved subsequent to this reporting period – is related to the engineering effort to redesign the Unit 2 switchyard communication system which interconnects with sub-stations located on St. George transmission lines 1 and 2. The new engineering design will reflect a power line carrier communication system in lieu of the original fiber optic communication system design.

Change Order No. 8 is the result of the Company's negotiations to move several work scopes from Target Pricing to Firm/Fixed Pricing. SCE&G also secured a reduced risk premium as part of these negotiations.

Table 3 below details the Change Orders and Amendments.

Table 3:

| Change Orders and Amendments | | | | | |
|------------------------------|---|---|------------------------|---------------|-------------------|
| # | Summary | Cost Categories Involved | Type of Change | Date Approved | Status |
| 1 | Operator training for WEC Reactor Vessel Systems and Simulator training | Fixed Price with 0% escalation ⁴ | Owner Directed | 7/22/2009 | Approved |
| 2 | Limited Scope Simulator | Firm | Owner Directed | 9/11/2009 | Approved |
| 3 | Repair of Parr Road | Time and Materials | Owner Directed | 1/21/2010 | Approved |
| 4 | Transfer of Erection of CA20 Module from WEC to Shaw | Target Price work shifting to Firm Price | Contractor Convenience | N/A | Superseded by #8 |
| 5 | <i>*Addition to Change Order #1*</i> Increased training by two weeks | Fixed Price with 0% escalation ⁴ | Owner Directed | 5/4/2010 | Approved |
| 6 | Hydraulic Nuts | Fixed Price | Owner Directed | 7/13/2010 | Approved |
| 7 | St. George Lines 1 & 2 | Firm and Target Price | Entitlement | 7/13/2010 | Approved |
| 8 | Target to Firm/Fixed Shift | Target, Firm and Fixed Price Categories | Owner Directed | Pending | Under Development |

| | | |
|---------------------|---------------------------------------|----------------------|
| Amendment #1 | Includes Change Orders 1 and 2 | Executed on 8/2/2010 |
| Amendment #2 | Will incorporate Change Orders 3, 5-8 | Under Development |

⁴ Fixed Price with 0% escalation, but applied to Time and Materials Work Allowances by adding a new category for Simulator Instructor training and reducing Startup Support by commensurate amount.

Approved Budget Review

ORS's budget review includes an analysis of the 2nd quarter 2010 cost estimates, project cash flow, escalation, and Allowance for Funds Used During Construction ("AFUDC").

Cost Estimates

To determine how closely the Company adheres to the budget approved by the Commission in Order 2010-12, ORS evaluates nine (9) major cost categories for variances. These cost categories are:

- Fixed with Adjustment at 0%
- Firm with Fixed Adjustment A
- Firm with Fixed Adjustment B
- Firm with Indexed Adjustment
- Actual Craft Wages
- Non-Labor Cost
- Time & Materials
- Owners Costs
- Transmission Projects

ORS found multiple variances which were due to various project changes (e.g., shifts in work scopes, payment timetables, construction schedule adjustments, change orders, etc). As of the end of the 2nd quarter of 2010, the cumulative impact of these changes increase the total base project cost⁵ (in 2007 dollars) from the approved \$4.096 billion to \$4.177 billion, which is an increase of approximately \$81.3 million.

Project Cash Flow

In its Report, the Company also compares its current project cash flow to the cash flow schedule approved by the Commission in Order 2010-12. To produce a common basis for the comparison, SCE&G adjusts the approved cash flow schedule to reflect the current escalation rates. As of June 30, 2010, the comparison shows the yearly maximum annual variance above and below the approved cash flow schedule through the life of the project. The comparison also shows the cumulative project cash flow is forecasted to be roughly \$20.8 million over budget at the end of 2010. At the end of the project in 2018, the cumulative project cash flow is forecasted to be approximately \$2.5 million over budget.

⁵ Base project cost does not include contingency dollars.

Table 4 shows the annual and cumulative project cash flows as compared to those approved in Order No. 2010-12.

Table 4:

| Project Cash Flow Comparison | | | |
|---------------------------------------|------|------------------------|----------------------------|
| <i>\$'s in Thousands ⁶</i> | | | |
| | | Annual Over/(Under) | Cumulative Over/(Under) |
| Actual | 2007 | - | - |
| | 2008 | \$0 | \$0 |
| | 2009 | (\$5,028) | (\$5,028) |
| Projected | 2010 | \$25,849 | \$20,821 |
| | 2011 | (\$62,278) | (\$41,457) |
| | 2012 | \$28,767 | (\$12,689) |
| | 2013 | \$29,446 | \$16,757 |
| | 2014 | (\$1,383) | \$15,374 |
| | 2015 | \$2,564 | \$17,938 |
| | 2016 | \$1,242 | \$19,180 |
| | 2017 | (\$7,471) | \$11,709 |
| | 2018 | (\$9,210) | \$2,499 |

In summary, the increase in the base project cost of approximately \$81.3 million and the project cash flow requirements of \$2.5 million roughly equate to an additional \$83.8 million necessary to complete the project. This amount is approximately 2% of the approved total project capital cost commitment of \$4.534 billion⁷ (in 2007 dollars). The additional \$83.8 million needed to complete the project is in excess of the approved budget. However, in its Report, SCE&G utilizes the project contingency pool of \$438.293 million to offset this increase, which allows the project to stay within the overall budget that was approved by the Commission.⁸

⁶ There will be slight variances in these numbers due to rounding.

⁷ The total project capital cost commitment is the summation of the base project cost and contingency dollars.

⁸ On August 9, 2010, the South Carolina Supreme Court ruled that the contingency fund was inappropriately included in the capital cost projections approved under the BLRA.

AFUDC and Escalation

The forecasted AFUDC for the project through the 2nd quarter of 2010 is \$329.766 million and is based on a forecasted 7.1% AFUDC rate. This is an increase of approximately \$409,000 from the Company's 2010 1st Quarter Report.

As reported by ORS in its review of the SCE&G's 2010 1st Quarter Report, the decline in the five-year average escalation rates reduce the projected project cash flow. Current worldwide economic conditions continue to reduce the projected cost escalation of the project. Currently, the U.S. inflation rate forecast indicates a decrease in escalation for the remainder of 2010. Primarily due to the decrease in escalation rates, the project is considered under budget. More specifically, as of June 30, 2010, the forecast of gross construction cost of the plant is \$6.227 billion as compared to the approved gross construction cost of \$6.875 billion which reflects an approximate \$648 million overall reduction in the cost of the project.

As mentioned above, the available project contingency pool is approximately \$438 million (2007 dollars). The Company reports in its Report that \$2.277 million or approximately 3% of the \$78.628 million forecasted contingency through 2010 has been used.

Additional ORS Monitoring Activities

ORS continually performs the following activities as well as other monitoring activities as deemed necessary.

- Audits capital cost expenditures and resulting AFUDC in Construction Work in Progress
- Physically observes construction activities
- Performs bi-monthly on-site review of construction documents
- Holds monthly update meetings with SCE&G
- Meets quarterly with representatives of WEC
- Participates in NRC conference calls
- Attends NRC Public Meetings regarding SCE&G Combined License Application
- Attends NRC Advisory Committee on Reactor Safeguards ("ACRS") meetings

Notable Activities Occurring after June 30, 2010

The BLRA allows SCE&G 45 days from the end of the current quarter to file its Report. Items of importance that occurred subsequent to the closing of the 2nd quarter are reported below.

On August 9, 2010, the South Carolina Supreme Court ruled that SCE&G may not recover “contingency costs” under the BLRA. S.C. Energy Users Comm. vs. South Carolina Pub. Serv. Comm’n, --- S.E.2d ---, 2010 WL 3120253, S.C., August 09, 2010 (Op No. 26856) (Shearhouse Adv. Sh. No. 31 at 117). Previously, contingency costs had been approved as a capital cost category by the Commission in Order No. 2009-104(A), as modified by Order No. 2010-12. The Supreme Court’s ruling removes all contingency costs totaling \$438.293 million from the approved budget for the Units, thereby reducing the overall approved budget. That is, the total approved SCE&G project commitment (in unescalated 2007 dollars) is reduced from \$4.534 billion to \$4.096 billion.

The Supreme Court ruling was issued during the pendency of SCE&G’s revised rates request in Commission Docket No. 2010-157-E, which included \$2.277 million in contingency costs spent as of June 30, 2010. The day after the Supreme Court ruling, ORS supplied the Commission with a revised rates filing removing the \$2.277 million in contingency dollars from the revised rates request. Accordingly, the resulting retail revenue requirement was reduced by approximately \$270,000. The Company concurred with ORS’s filing by separate letter. It should be noted that Commission Docket No. 2010-157-E is the Company’s second request for revised rates. SCE&G’s first request for revised rates in Commission Docket No. 2009-211-E contained **no** contingency costs. In summary, the Company is not permitted to recover costs considered “contingency costs” under the BLRA and ratepayers have not paid for any contingency costs through their rates.

As mentioned in ORS’s review of the Company’s 2010 1st Quarter Report, SCE&G was in active negotiations with Shaw regarding the use of a single, large Bigge Crane as opposed to two smaller cranes contemplated in the EPC Contract. SCE&G reports to ORS that Change Order No. 8 satisfies the Company’s concerns regarding the use of a single large crane. ORS will continue to monitor this issue as the details of Change Order No. 8 are finalized.

The Federal Draft Environmental Impact Statement (“DEIS”) was issued by the NRC on April 26, 2010 with a public comment period until July 9, 2010. On July 9, 2010, the US Environmental Protection Agency (“EPA”) issued its comments (Environmental Concerns – Insufficient Information) to the DEIS. EPA’s primary recommendation is for the Final Environmental Impact Statement (“FEIS”) to include updated information regarding

transmission line impacts and the status of the 404 permitting process. EPA's July 9, 2010 comment letter is attached as Appendix C. The FEIS is scheduled to be issued February 2011.

On September 1, 2010, the NRC issued a progress report on the review of the AP1000 design certification application. In the letter, the NRC notes that WEC has not been able to fully adhere to the review schedule established in the NRC June 21, 2010 letter.⁹⁹ The NRC is waiting for the submittal of documentation supporting the closure of approximately fifteen (15) unresolved technical issues. The NRC states in its closing paragraph that any impacts on the overall design certification schedule resulting from the delay in receiving documentation after July 30, 2010 are currently unknown. The NRC progress report is attached as Appendix D.

Upcoming notable NRC dates are listed below in Table 5.

Table 5:

| Notable NRC Dates | |
|--------------------------|---|
| October 2010 | NRC Final Safety Evaluation Report ("SER") information issued |
| December 2010 | ACRS holds final subcommittee meeting on AP1000 Design Certification Amendment ("DCA") and NRC receives WEC DCA Revision 18 submittal ¹⁰ |
| February 2011 | FEIS issued and Federal Register Notice for Proposed Rulemaking published by NRC |
| April 2011 | Public comment period ends for NRC Proposed Rulemaking |
| September 2011 | NRC Final Rulemaking |

SCE&G's 2010 3rd Quarter Report is due 45 days after September 30, 2010. ORS expects to continue publishing a report evaluating SCE&G's quarterly report.

⁹ The NRC June 21, 2010 letter was attached to ORS's Review of SCE&G's 2010 1st Quarter Report as Appendix C.

¹⁰ This language is directly from the NRC June 21, 2010 letter. ORS expects the DCA with Design Control Documents ("DCDs") through Revision 18 will be submitted to the NRC on this date.

Appendix A

Detailed Milestone Schedule as of June 30, 2010

| | | | |
|-------------|-------------------------------------|----------------------------|--|
| Key: | Completed Prior to Q2-10 | Current Quarter | Scheduled to Be Completed Q3-10 |
|-------------|-------------------------------------|----------------------------|--|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q2-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|----------------------------|---|--|--|---|---|---------------------------------------|---|
| 1 | Approve Engineering, Procurement and Construction Agreement | 5/23/2008 | | No | No | 5/23/2008 | |
| 2 | Issue Purchase Orders ("P.O.") to Nuclear Component Fabricators for Units 2 and 3 Containment Vessels | 12/3/2008 | | No | No | 12/3/2008 | |
| 3 | Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator – First Payment - Unit 2 | 8/31/2008 | | No | No | 8/18/2008 | |
| 4 | Contractor Issue P.O. to Accumulator Tank Fabricator – Unit 2 | 7/31/2008 | | No | No | 7/31/2008 | |
| 5 | Contractor Issue P.O. to Core Makeup Tank Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |
| 6 | Contractor Issue P.O. to Squib Valve Fabricator- Units 2 & 3 | 3/31/2009 | | No | No | 3/31/2009 | |
| 7 | Contractor Issue P.O. to Steam Generator Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 8 | Contractor Issue Long Lead Material P.O. to Reactor Coolant Pump+B1 Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 9 | Contractor Issue P.O. to Pressurizer Fabricator - Units 2 & 3 | 8/31/2008 | | No | No | 8/18/2008 | |
| 10 | Contractor Issue P.O. to Reactor Coolant Loop Pipe Fabricator - First Payment- Units 2 & 3 | 6/30/2008 | | No | No | 6/20/2008 | |

| | | | |
|-------------|-------------------------------------|----------------------------|--|
| Key: | Completed Prior to Q2-10 | Current Quarter | Scheduled to Be Completed Q3-10 |
|-------------|-------------------------------------|----------------------------|--|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q2-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|----------------------------|--|--|--|---|---|---------------------------------------|---|
| 11 | Reactor Vessel Internals – Issue Long Lead Material P.O. to Fabricator Units 2 and 3 | 11/21/2008 | | No | No | 11/21/2008 | |
| 12 | Contractor Issue Long Lead Material - P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 13 | Contractor Issue P.O. to Integrated Head Package Fabricator - Units 2 & 3 | 7/31/2009 | | No | No | 7/31/2009 | |
| 14 | Control Rod Drive Mechanism – Issue P.O. for Long Lead Material to Fabricator - Units 2 and 3 - First Payment | 6/21/2008 | | No | No | 6/21/2008 | |
| 15 | Issue P.O.s to Nuclear Component Fabricators for Nuclear Island Structural CA20 Modules | 7/31/2009 | | No | No | 8/28/2009 | |
| 16 | Start Site Specific and Balance of Plant Detailed Design | 9/11/2007 | | No | No | 9/11/2007 | |
| 17 | Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 18 | Steam Generator - Issue Final P.O. to Fabricator for Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 19 | Reactor Vessel Internals - Contractor Issue P.O. for Long Lead Material (Heavy Plate and Heavy forgings) to Fabricator - Units 2 & 3 | 1/31/2010 | | No | No | 1/29/2010 | |
| 20 | Contractor Issue Final P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |

| | | | |
|-------------|-------------------------------------|----------------------------|--|
| Key: | Completed Prior to Q2-10 | Current Quarter | Scheduled to Be Completed Q3-10 |
|-------------|-------------------------------------|----------------------------|--|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q2-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|----------------------------|--|--|--|---|---|---------------------------------------|---|
| 21 | Variable Frequency Drive Fabricator Issue Transformer P.O. - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 22 | Start Clearing, Grubbing and Grading | 1/26/2009 | | No | No | 1/26/2009 | |
| 23 | Core Makeup Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 24 | Accumulator Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 25 | Pressurizer Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 26 | Reactor Coolant Loop Pipe - Contractor Issue P.O. to Fabricator - Second Payment - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 27 | Integrated Head Package - Issue P.O. to Fabricator - Units 2 & 3 - Second Payment | 7/31/2009 | | No | No | 7/31/2009 | |
| 28 | Control Rod Drive Mechanism - Contractor Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 29 | Contractor Issue P.O. to Passive Residual Heat Removal Exchanger Fabricator - Second Payment - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 30 | Start Parr Road Intersection Work | 2/13/2009 | | No | No | 2/13/2009 | |

| | | | |
|-------------|-------------------------------------|----------------------------|--|
| Key: | Completed Prior to Q2-10 | Current Quarter | Scheduled to Be Completed Q3-10 |
|-------------|-------------------------------------|----------------------------|--|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q2-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 31 | Reactor Coolant Pump - Issue Final P.O. to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 32 | Integrated Heat Packages Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2009 | | No | No | 10/1/2009 | 1 Month Early |
| 33 | Design Finalization Payment 3 | 1/31/2009 | | No | No | 1/30/2009 | |
| 34 | Start Site Development | 6/23/2008 | | No | No | 6/23/2008 | |
| 35 | Contractor Issue P.O. to Turbine Generator Fabricator - Units 2 & 3 | 2/28/2009 | | No | No | 2/19/2009 | |
| 36 | Contractor Issue P.O. to Main Transformers Fabricator - Units 2 & 3 | 9/30/2009 | | No | No | 9/25/2009 | |
| 37 | Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3 | 11/30/2010 | 11/30/2010 | No | No | | |
| 38 | Design Finalization Payment 4 | 4/30/2009 | | No | No | 4/30/2009 | |
| 39 | Turbine Generator Fabricator Issue P.O. for Condenser Material - Unit 2 | 8/31/2009 | | No | No | 8/28/2009 | |
| 40 | Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |

| Key: | Completed Prior to Q2-10 | Current Quarter | Scheduled to Be Completed Q3-10 |
|------|-----------------------------|--------------------|---------------------------------------|
|------|-----------------------------|--------------------|---------------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q2-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---|--|---|------------------------------|---------------------------------|
| 41 | Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3 | 5/31/2010 | | No | No | 5/27/2010 | |
| 42 | Design Finalization Payment 5 | 7/31/2009 | | No | No | 7/31/2009 | |
| 43 | Start Erection of Construction Buildings Including Craft Facilities for Personnel, Tools, Equipment; First Aid Facilities; Field Offices for Site Management and Support Personnel; Temporary Warehouses; and Construction Hiring Office | 10/9/2009 | | No | No | 12/18/2009 | Delayed 2 Months |
| 44 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2 | 7/31/2009 | | No | No | 8/28/2009 | |
| 45 | Design Finalization Payment 6 | 10/31/2009 | | No | No | 10/7/2009 | |
| 46 | Instrumentation and Control/Simulator - Contractor Issue P.O. to Subcontractor for Radiation Monitor System - Units 2 & 3 | 12/31/2009 | | No | No | 12/17/2009 | |
| 47 | Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 2/28/2011 | No | No | | 4 Months Early |
| 48 | Turbine Generator Fabricator Issue P.O. for Moisture Separator Reheater/Feedwater Heater Material Unit 2 | 4/30/2010 | | No | No | 4/30/2010 | |
| 49 | Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2 | 4/30/2010 | | No | No | 2/18/2010 | 2 Months Early |

| Key: | Completed Prior to Q2-10 | Current Quarter | Scheduled to Be Completed Q3-10 |
|------|-----------------------------|--------------------|---------------------------------------|
|------|-----------------------------|--------------------|---------------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q2-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---|--|---|------------------------------|---------------------------------|
| 50 | Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2 | 10/31/2011 | 10/31/2011 | No | No | | |
| 51 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2 | 6/30/2009 | | No | No | 6/30/2009 | |
| 52 | Contractor Notified That Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2 | 11/30/2010 | 11/30/2010 | No | No | | |
| 53 | Start Excavation and Foundation Work for the Standard Plant for Unit 2 | 3/15/2010 | | No | No | 3/15/2010 | |
| 54 | Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2 | 2/28/2010 | | No | No | 4/30/2010 | Delayed 2 Months |
| 55 | Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2 | 2/28/2010 | 10/31/2010 | No | No | | Delayed 8 Months |
| 56 | Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2 | 5/31/2010 | | No | No | 5/17/2010 | |
| 57 | Complete Preparations for Receiving the First Module On Site for Unit 2 | 8/18/2010 | | No | No | 1/22/2010 | Completed - 7 Months Early |
| 58 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2 | 4/30/2010 | | No | No | 4/21/2010 | |
| 59 | Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2 | 11/30/2010 | 9/30/2010 | No | No | | 2 Months Early |

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|-------------|-------------------------------------|----------------------------|--|

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|------------------------|---|--|--|---|---|---------------------------------------|---|
| 60 | Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2 | 12/31/2010 | 5/31/2011 | No | No | | Delayed 5 Months |
| 61 | Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2 | 5/31/2011 | 10/31/2011 | No | No | | Delayed 5 Months |
| 62 | Polar Crane Fabricator Issue P.O. for Main Hoist Drum and Wire Rope - Units 2 & 3 | 2/28/2011 | 2/28/2011 | No | No | | |
| 63 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3 | 6/30/2011 | 6/30/2011 | No | No | | |
| 64 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2 | 10/31/2011 | 1/31/2012 | No | No | | Delayed 3 Months |
| 65 | Start Placement of Mud Mat for Unit 2 | 7/14/2011 | 7/17/2011 | No | No | | |
| 66 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2 | 1/31/2011 | 2/28/2011 | No | No | | |
| 67 | Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2 | 10/31/2010 | 11/30/2010 | No | No | | Delayed 1 Month |
| 68 | Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3 | 2/28/2012 | 2/28/2012 | No | No | | |

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 69 | Begin Unit 2 First Nuclear Concrete Placement | 10/3/2011 | 10/1/2011 | No | No | | |
| 70 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2 | 9/30/2011 | 9/30/2011 | No | No | | |
| 71 | Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 2/28/2011 | No | No | | 4 Months Early |
| 72 | Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2 | 5/31/2011 | 7/31/2011 | No | No | | Delayed 2 Months |
| 73 | Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2 | 12/31/2012 | 10/31/2011 | No | No | | 14 Months Early |
| 74 | Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2 | 12/31/2011 | 12/31/2011 | No | No | | |
| 75 | Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2 | 10/31/2010 | 11/30/2010 | No | No | | Delayed 1 Month |
| 76 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2 | 6/30/2011 | 8/31/2011 | No | No | | Delayed 2 Months |
| 77 | Design Finalization Payment 14 | 10/31/2011 | 10/31/2011 | No | No | | |

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|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 78 | Set Module CA04 For Unit 2 | 1/27/2012 | 1/27/2012 | No | No | | |
| 79 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2 | 6/30/2010 | 7/31/2010 | No | No | | Delayed 1 Month |
| 80 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2 | 1/31/2011 | 2/28/2011 | No | No | | |
| 81 | Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2 | 2/28/2012 | 4/30/2012 | No | No | | Delayed 2 Months |
| 82 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3 | 8/31/2013 | 7/31/2013 | No | No | | 1 Month Early |
| 83 | Set Containment Vessel Ring #1 for Unit 2 | 4/3/2012 | 4/3/2012 | No | No | | |
| 84 | Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2 | 3/31/2012 | 3/31/2012 | No | No | | |
| 85 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3 | 8/31/2013 | 1/31/2013 | No | No | | 7 Months Early |
| 86 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3 | 9/30/2012 | 9/30/2012 | No | No | | |

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|----------------------------|---|--|--|---|---|---------------------------------------|---|
| 87 | Contractor Notified That Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3 | 1/31/2013 | 12/31/2011 | No | No | | 13 Months Early |
| 88 | Set Nuclear Island Structural Module CA03 for Unit 2 | 8/30/2012 | 8/30/2012 | No | No | | |
| 89 | Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2 | 5/31/2012 | 8/31/2012 | No | No | | Delayed 3 Months |
| 90 | Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 12/31/2012 | 12/31/2012 | No | No | | |
| 91 | Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2 | 7/31/2012 | 1/31/2012 | No | No | | 6 Months Early |
| 92 | Start Containment Large Bore Pipe Supports for Unit 2 | 4/9/2012 | 5/29/2012 | No | No | | Delayed 1 Month |
| 93 | Integrated Head Package - Shipment of Equipment to Site - Unit 2 | 10/31/2012 | 2/28/2013 | No | No | | Delayed 4 Months |
| 94 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2 | 11/30/2012 | 11/30/2012 | No | No | | |
| 95 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3 | 5/31/2013 | 4/30/2013 | No | No | | 1 Month Early |

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 96 | Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Stream Generator Hydrotest - Unit 2 | 5/31/2012 | 5/31/2012 | No | No | | |
| 97 | Start Concrete Fill of Nuclear Island Structural Modules CA01 and CA02 for Unit 2 | 2/26/2013 | 2/26/2013 | No | No | | |
| 98 | Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2 | 4/30/2012 | 11/30/2011 | No | No | | 5 Months Early |
| 99 | Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2 | 2/28/2013 | 8/31/2012 | No | No | | 6 Months Early |
| 100 | Deliver Reactor Vessel Internals to Port of Export - Unit 2 | 7/31/2013 | 7/31/2013 | No | No | | |
| 101 | Set Unit 2 Containment Vessel #3 | 4/17/2013 | 4/17/2013 | No | No | | |
| 102 | Steam Generator - Contractor Acceptance of Equipment At Port of Entry - Unit 2 | 3/31/2013 | 2/28/2013 | No | No | | 1 Month Early |
| 103 | Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2 | 4/30/2013 | 4/30/2013 | No | No | | |
| 104 | Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 2/28/2014 | 2/28/2013 | No | No | | 12 Months Early |

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|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 105 | Polar Crane - Shipment of Equipment to Site - Unit 2 | 5/31/2013 | 11/30/2012 | No | No | | 6 Months Early |
| 106 | Receive Unit 2 Reactor Vessel On Site From Fabricator | 5/20/2013 | 5/20/2013 | No | No | | |
| 107 | Set Unit 2 Reactor Vessel | 6/18/2013 | 6/18/2013 | No | No | | |
| 108 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3 | 12/31/2013 | 11/30/2013 | No | No | | 1 Month Early |
| 109 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3 | 8/31/2014 | 8/31/2014 | No | No | | |
| 110 | Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2 | 9/30/2013 | 9/30/2013 | No | No | | |
| 111 | Place First Nuclear Concrete for Unit 3 | 8/1/2013 | 8/1/2013 | No | No | | |
| 112 | Set Unit 2 Steam Generator | 9/9/2013 | 9/9/2013 | No | No | | |
| 113 | Main Transformers Ready to Ship - Unit 2 | 9/30/2013 | 8/31/2013 | No | No | | 1 Month Early |

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|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 114 | Complete Unit 3 Steam Generator Hydrotest At Fabricator (9.1Q:Reactor Vessel Internals - Fabricator Start Perform Guide Tubes Free Path Test - Unit 3) | 2/28/2014 | 3/31/2014 | No | No | | Delayed 1 Month |
| 115 | Set Unit 2 Containment Vessel Bottom Head on Basemat Legs | 11/21/2011 | 11/21/2011 | No | No | | |
| 116 | Set Unit 2 Pressurizer Vessel | 1/24/2014 | 1/24/2014 | No | No | | |
| 117 | Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3 | 2/28/2015 | 3/31/2015 | No | No | | Delayed 1 Month |
| 118 | Deliver Reactor Vessel Internals to Port of Export - Unit 3 | 6/30/2015 | 6/30/2015 | No | No | | |
| 119 | Main Transformers Fabricator Issue P.O. for Material - Unit 3 | 4/30/2014 | 4/30/2014 | No | No | | |
| 120 | Complete Welding of Unit 2 Passive Residual Heat Removal System Piping | 3/19/2014 | 3/19/2014 | No | No | | |
| 121 | Steam Generator Contractor Acceptance of Equipment At Port of Entry - Unit 3 | 4/30/2015 | 1/31/2015 | No | No | | 3 Months Early |
| 122 | Refueling Machine - Shipment of Equipment to Site - Unit 3 | 5/31/2014 | 5/31/2014 | No | No | | |

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 123 | Set Unit 2 Polar Crane | 4/3/2014 | 4/3/2014 | No | No | | |
| 124 | Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3 | 6/30/2015 | 8/31/2015 | No | No | | Delayed 2 Months |
| 125 | Main Transformers Ready to Ship - Unit 3 | 9/30/2014 | 6/30/2015 | No | No | | Delayed 9 Months |
| 126 | Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3 | 12/31/2014 | 7/31/2014 | No | No | | 5 Months Early |
| 127 | Start Electrical Cable Pulling in Unit 2 Auxiliary Building | 12/26/2014 | 12/18/2014 | No | No | | |
| 128 | Complete Unit 2 Reactor Coolant System Cold Hydro | 8/3/2015 | 7/3/2015 | No | No | | 1 Month Early |
| 129 | Activate Class 1E DC Power in Unit 2 Auxiliary Building | 3/5/2015 | 2/25/2015 | No | No | | |
| 130 | Complete Unit 2 Hot Functional Test | 9/21/2015 | 9/21/2015 | No | No | | |
| 131 | Install Unit 3 Ring 3 for Containment Vessel | 7/30/2015 | 2/19/2015 | No | No | | 5 Months Early |
| 132 | Load Unit 2 Nuclear Fuel | 10/28/2015 | 10/2/2015 | No | No | | |

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|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 133 | Unit 2 Substantial Completion | 4/1/2016 | 4/1/2016 | No | No | | |
| 134 | Set Unit 3 Reactor Vessel | 10/1/2015 | 5/14/2015 | No | No | | 4 Months Early |
| 135 | Set Unit 3 Steam Generator #2 | 12/22/2015 | 8/3/2015 | No | No | | 4 Months Early |
| 136 | Set Unit 3 Pressurizer Vessel | 5/16/2016 | 11/23/2015 | No | No | | 5 Months Early |
| 137 | Complete Welding of Unit 3 Passive Residual Heat Removal System Piping | 6/20/2016 | 1/21/2016 | No | No | | 5 Months Early |
| 138 | Set Unit 3 Polar Crane | 7/18/2016 | 2/5/2016 | No | No | | 5 Months Early |
| 139 | Start Unit 3 Shield Building Roof Slab Rebar Placement | 1/16/2017 | 8/2/2016 | No | No | | 5 Months Early |
| 140 | Start Unit 3 Auxiliary Building Electrical Cable Pulling | 4/6/2017 | 12/2/2016 | No | No | | 4 Months Early |
| 141 | Activate Unit 3 Auxiliary Building Class 1E DC Power | 6/9/2017 | 12/27/2016 | No | No | | 5 Months Early |
| 142 | Complete Unit 3 Reactor Coolant System Cold Hydro | 1/1/2018 | 5/3/2017 | No | No | | 8 Months Early |

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|----------------------------|-------------------------------------|--|--|---|---|---------------------------------------|---|
| 143 | Complete Unit 3 Hot Functional Test | 2/15/2018 | 5/17/2018 | No | No | | Delayed 3 Months |
| 144 | Complete Unit 3 Nuclear Fuel Load | 7/31/2018 | 7/19/2018 | No | No | | |
| 145 | Begin Unit 3 Full Power Operation | 10/31/2018 | 10/23/2018 | No | No | | |
| 146 | Unit 3 Substantial Completion | 1/1/2019 | 1/1/2019 | No | No | | |

Appendix B

Construction Site Pictures

Excavation of Table Top Areas



Unit 2 Power Block Excavation



15.04.2010 12:19

Unit 2 Circulating Water System Piping



Concrete Batch Plant



Mayo Creek Bridge



Cable Storage Building

Building 57



Erection of Steel for Module Assembly Building



Appendix C

EPA Comments on Draft Environmental Impact Statement



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
SAM NUNN
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA GEORGIA 30303-8960

July 9, 2010

Chief, Rulemaking and Directives Branch
Office of Administration
Mail Stop: TWB-05-B01M
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RE: EPA Review and Comments
Draft Environmental Impact Statement (DEIS) for the
Combined Licenses (COLs) for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3
Construction and Operation of a New Nuclear Power Generating Facility
NUREG-1939
CEQ No. 20100144

Dear Sir:

The U.S. Environmental Protection Agency (EPA) has reviewed the subject Draft Environmental Impact Statement (DEIS) pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act. The purpose of this letter is to inform you of the results of our review, and our detailed comments are enclosed.

South Carolina Electric and Gas (SCE&G) in conjunction with Santee Cooper (the State owned electric and water utility) applied for combined construction permits and operating licenses (combined licenses or COLs) for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3. The proposed actions are:

- NRC issuance of COLs for two new nuclear power reactor units (Units 2 and 3) at the VCSNS site in Fairfield County, South Carolina.
- U.S. Army Corps of Engineers (USACE) permit action on an Individual Permit application pursuant to Section 404 of the Clean Water Act, to perform certain activities on the site.

The DA permit would allow permanent filling of approximately 0.26 acres of wetlands and disturbance of 774 linear feet of streams, as well as the permanent conversion of 224.2 acres of forested wetlands to nonforested wetlands because of new transmission lines connecting the VCSNS facility to the electrical grid.

VCSNS Units 2 and 3 would withdraw water from the Monticello Reservoir, which currently supplies water to Unit 1. Cooling water blowdown would be discharged to the Parr Reservoir. A water treatment facility discharging into the Monticello Reservoir is planned for the new units.

The DEIS discusses the proposed action and alternatives. Alternatives include the construction and operation of two new reactors at the VCSNS site or at alternative sites, the no-action alternative, energy source alternatives, system design alternatives, and onsite alternatives to reduce impacts on natural and cultural resources. The DEIS states that none of the alternative sites were determined to be environmentally preferable to the VCSNS site.

Environmental concerns include impacts to surface water resources and wetlands. EPA also has concerns regarding groundwater quality, since sampling data showed an exceedance of SCHEC drinking water standards regarding nonradiological parameters and Gross Alpha radiation. Tritium was detected in surface water, but at levels below national primary drinking water standards.

EPA has reviewed the impacts to wetlands and streams in response to the COE's public notice for the Clean Water Act Section 404 permit application, and has transmitted a separate letter in accordance with Section 404 coordination procedures. We note that the Joint Public Notice was for the impacts from the new units only, and does not include the associated transmission lines. The applicant has estimated that construction of the transmission lines will permanently convert 224.2 acres of forested wetlands to nonforested wetlands.

The applicant is required to submit a Clean Water Act Section 404 permit application for the wetlands impacts related to construction of transmission lines. Pursuant to EPA's meeting with you, the USACE and the applicant on July 1, 2010, we understand that a revised public notice will be published to include the estimated wetlands impacts related to transmission lines. EPA is concerned about these impacts, since transmission line construction may result in habitat fragmentation, opening new corridors to off-road vehicle traffic, stream corridor impacts and other ecological impacts. Transmission line impacts on area residents and EJ communities are another area of concern. We recommend that the public outreach process particularly include public disclosure and opportunity for public comment regarding these transmission lines.

Radioactive waste storage and disposal are ongoing concerns with existing and proposed nuclear power plants. In the Waste Confidence Rule (10 CFR 51.23), the Commission generically determined that the spent fuel generated by any reactor can be safely stored on-site for at least 30 years beyond the licensed operating life of the reactor. Ultimately, long-term radioactive waste disposition will require transportation of wastes to a permitted repository site.

Since appropriate on-site storage of spent fuel assemblies and other radioactive wastes are necessary to prevent environmental impacts, EPA believes the FEIS should provide a thorough consideration of impacts resulting from such storage. The DEIS notes that planning is in progress regarding a repository for high-level and transuranic wastes. However, given the uncertainty regarding ultimate disposal at a repository, on-site storage may continue for many years.

Additional discussion of on-site storage plans and ultimate disposition of radioactive wastes generated from the site, as well as continuing measures to limit bioentrainment and other impacts to aquatic species from surface water withdrawals and discharges, should be addressed as the project progresses. Compliance with the NPDES Permit should be addressed for the existing

and new units. The NPDES permittee has operated and is currently operating in compliance with the NPDES permit requirements for the existing Unit 1.

The FEIS should include further information regarding plans to reduce Greenhouse Gases (GHGs) and other air emissions during construction and operation of the facility. Specifically, energy efficiency should be a consideration in the construction and operation of facility buildings, equipment, and vehicles.

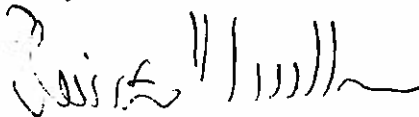
In regard to historical and community resource concerns, we note that a management agreement is pending with the State Historic Preservation Office (SHPO). The DEIS states that no unavoidable adverse Environmental Justice (EJ) impacts would occur. However, clarifying information regarding the EJ data, plans for community involvement, and anticipated impacts to the community and EJ populations from transmission lines should be included in the FEIS.

The DEIS states that impacts to members of the public from operation, including etiological (disease-causing) agents, noise, electromagnetic fields, occupational health and transportation of materials would be minimal due to controls and measures associated with compliance with Federal and State regulations.

Based on EPA's review of the DEIS, the document received a rating of EC-2, meaning that the EPA review identified environmental impacts that, if avoided, would more fully protect the environment. (A summary of EPA's rating definitions is enclosed.) In particular, EPA recommends that the Final EIS (FEIS) include updated information about transmission line impacts, and the status of the 404 permitting process. In addition, clarification of the source of nonradiological parameters which exceeded SCDHEC drinking water standards in sampling data, as well as impacts related to radiological contaminants, particularly tritium, should be addressed in the FEIS. Also, updated sampling data, if available, should be included. The FEIS should include a discussion of opportunities to reduce GHG and other air emissions during construction and operation of the facility.

Thank you for the opportunity to comment on this DEIS. We look forward to reviewing the FEIS. If you have any questions or need additional information, please contact Ramona McConney of my staff at (404) 562-9615.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Cc: Richard Darden, USACE

Enclosures: EPA Review and Comments
Summary of Rating Definitions and Follow Up Action

EPA Review and Comments Regarding
Draft Environmental Impact Statement (DEIS) for the
Combined Licenses (COLs) for Virgil C. Summer Nuclear Station Units 2 and 3
Construction and Operation of a New Nuclear Power Generating Facility
(NUREG-1939)

Alternatives

A suite of alternatives was evaluated in the DEIS, including the no-action alternative, energy source alternatives, alternative sites, system design alternative and onsite alternatives for reducing impacts.

Construction of transmission lines is estimated to convert 224.2 acres of forested wetlands to non-forested wetlands. EPA has concerns about the transmission line impacts, and we note that the Clean Water Act Section 404 permit application has not yet been submitted for transmission line impacts. We understand that a revised public notice is pending, and will include the estimated wetlands impacts related to transmission lines. The alternatives analysis in the DEIS includes transmission line corridor impacts for each alternative. We recommend that the FEIS contain updated information regarding transmission line construction plans as they relate to wetlands impacts and habitat fragmentation.

Supporting infrastructure

The supporting infrastructure at the site includes additional new facilities: roads, railroad lines, and buildings. New buildings associated with proposed Units 2 and 3 include the water-treatment plant, sanitary waste treatment plant, and power transmission system. Diesel generators would be installed as a backup power source. This construction should be considered part of the project, and the impacts of these actions are direct project impacts.

We reviewed the listing of permits required for the project in Appendix H, and note that no permits have been issued under the NRC's Limited Work Authorization (LWA) permitting process at this time. The DEIS (Volume 1, page 1-5) states that "...Activities associated with building the plant that are not within the purview of the NRC action are grouped under the term 'preconstruction'," and Appendix H describes LWA permitted activities as "safety-related construction activities."

We note that transmission lines are listed in the example of "preconstruction" activities in the DEIS (Volume 1, page 1-5), which also states that preconstruction activities are considered in the context of cumulative impacts. EPA is concerned about the impacts of transmission lines and supporting infrastructure for the project and, in accordance with NEPA, considers these activities as part of the project, and not a separate action.

Radioactive wastes

The DEIS states that SCE&G implemented a waste minimization plan to reduce the amount of mixed waste produced onsite. SCE&G stated "...the treatment, storage, and disposal of mixed wastes generated by the proposed Units 2 and 3 would be managed as the existing Unit 1 mixed wastes is managed," (Volume 1, page 5-76). The document should define how existing Unit 1 mixed wastes are being managed, along with a reference to documentation regarding the procedures of the mixed waste management program. The reference section at the end of Chapter 5 should also include this reference.

Appropriate on-site storage of spent fuel assemblies and other radioactive waste is necessary to prevent environmental impacts. The DEIS notes that planning is in progress regarding a repository for high-level and transuranic wastes. However, given the uncertainty regarding ultimate disposal at a repository, on-site storage may continue for a longer term than currently expected.

In the Waste Confidence Rule (10 CFR 51.23), the Commission generically determined that the spent fuel generated by any reactor can be safely stored on-site for at least 30 years beyond the licensed operating life of the reactor.

The DEIS states that unavoidable adverse air quality impacts would be negligible, and that pollutants emitted during operations would be insignificant (Volume 1, page 10-11).

Estimated Risks

Section 5.11.2.4, *Estimated Risks of Releases Related to External Events*, addresses seismic events, but does not mention the risk of releases due to terrorists attacks such as planes crashing into containment and/or other possible attacks. Risk assessment data for these scenarios should be calculated and described in this section in accordance with NRC guidelines.

Greenhouse Gases

EPA recommends that the discussion of mitigation in the FEIS consider opportunities to reduce Greenhouse Gases (GHGs) and other air emissions during construction and operation of the facility. Specifically, energy efficiency should be a consideration in the construction and operation of facility buildings, equipment, and vehicles. Equipment and vehicles that use conventional petroleum (e.g., diesel) should incorporate clean diesel technologies and fuels to reduced emissions of GHGs and other pollutants and should adhere to anti-idling policies to the extent possible. Alternate fuel vehicles (e.g., natural gas, electric) are also possibilities.

We disagree with the Review Team's conclusion in Section 7.6.2 that "... the national and worldwide cumulative impacts of greenhouse gas emissions are noticeable but not destabilizing". Since this conclusion is not in agreement with assessment literature on climate change science, we recommend that this statement be appropriately revised in the FEIS. As the DEIS notes in Section 2.9.1 "... EPA determined that potential changes in climate caused by greenhouse gas (GHG) emissions endanger public health and welfare (74 FR 66496)."

Carbon dioxide (CO₂) builds up in the atmosphere over time from emissions from many global sources and has a relatively long atmospheric lifetime (50-200 years). As such, we believe that the DEIS's rationale for not taking reasonable actions to minimize GHG emissions where possible at all phases of the project (i.e., the small size of the plant's construction and operation GHG emissions to total U.S. annual GHG emissions) is not warranted.

The DEIS concludes that nuclear power results in significantly lower CO₂ emissions than coal or natural gas-fired generation. To the extent that this particular facility will result in lower emissions than a given alternative, EPA recommends that the discussion state that lower CO₂ emissions overall would result in lower climate change risks.

(See CEQ's Draft NEPA Guidance on Consideration of the Effects of Climate Change and GHGs: <http://www.whitehouse.gov/sites/default/files/microsites/ceq/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf>, which discusses the uses of GHG emission levels as a reasonable proxy for potential climate change impacts.)

Section 6.1.3 describes 5.3E+7 metric tonnes of CO₂ (total carbon footprint including construction, 40 year lifespan, and decommissioning) for the fully operating plant as "small" for a carbon footprint for a facility with three reactors. That said, the carbon emissions associated the fossil fuel-based enrichment of uranium alone are actually quite comparable to the emissions of a smaller size fossil fuel-based power plant.

For example, assuming this project has a uranium fuel cycle footprint (as stated in Appendix J) of 1.4E+07 (for a 40 year lifespan for one reactor), such emissions are comparable to those exhibited by smaller coal fired power plants in South Carolina in 2007, (assuming the 2007 year emissions are comparable from year to year for 40 years). Specifically, in 2007 the emissions for the highest and lowest emitting coal plants were:

- Plant Cross (highest CO₂ emitter in 2007):
(1.2E+07 MT CO₂/y)(40y) = 4.8E+08 MT CO₂

- Plant Dolphus M. Grainger (lowest CO₂ emitter in 2007):
(8.9E+05 MT CO₂/y)(40y) = 3.6E+07 MT CO₂

[Reference: America's Biggest Polluters, Carbon Dioxide Emissions from Power Plants in 2007. Environment America Research and Policy Center. November 2009. <http://www.environmentamerica.org/home/reports/report-archives/global-warming-solutions/global-warming-solutions/americas-biggest-polluters-carbon-dioxide-emissions-from-power-plants-in-2008>]

The emissions associated with the lower end of this range (3.6E+07 MT CO₂) are comparable to the 40 year emissions of just one nuclear reactor (1.4E+07). When additional reactors are included, the plant's carbon footprint will be even more comparable to that of a smaller coal-fired plant. Thus, the DEIS statement in Section 9.2.4 that "*Among the viable energy-generation alternatives, the CO₂ emissions for nuclear power are a small fraction of the emissions of the*

other viable energy generation alternatives" [emphasis added] does not convey an accurate picture of the full lifecycle CO₂ emissions of the nuclear generation process.

(We also note that Section 6.1.3 states " *In Appendix J, the staff estimates that the carbon footprint of the fuel cycle to support a reference 1000-MW(e) LWR for a 40-year plant life is on the order of 1.8×10^7 MT of CO₂*" while Appendix J lists this value as 1.4×10^7 MT of CO₂. Also, the CO₂ footprint for decommissioning stated in Section 6.3 does not match the values given in Table J-3.)

Wetlands and Streams

EPA reviewed the impacts to wetlands and streams in response to the COE's public notice for the Clean Water Act Section 404 permit application, and transmitted a separate letter in accordance with Section 404 coordination procedures. The public notice relates solely to impacts related to construction of the new units, and does not include transmission line construction impacts. The DEIS states that 221.1 acres of wetlands would be impacted by construction of the new transmission lines.

The applicant is required to submit a Clean Water Act Section 404 permit application for the wetlands impacts related to construction of transmission lines, and the DEIS notes that these impacts would include conversion from forested to non-forested wetlands. The conversion of forested wetlands to non-forested wetlands constitutes a functional change in wetland type; any reduction in wetland functions will need to be compensated for. Transmission line construction may also result in habitat fragmentation, opening new corridors to off-road vehicle traffic, and other ecological impacts. EPA is concerned about these impacts and reserves the right to comment further on this issue. We understand that the applicant proposes to mitigate impacts by purchasing credits from mitigation banks.

The FEIS should include a conceptual compensatory mitigation plan that demonstrates that these losses in ecological functions will be replaced. In addition, the FEIS should identify the least environmentally damaging practicable alternative (LEDPA) and demonstrate how the preferred alternative has avoided wetlands and other water impacts to the maximum extent possible.

Surface Water

VCSNS Units 2 and 3 would obtain water for the cooling water systems from the Monticello Reservoir, which is hydrologically connected to the Broad River. Two new intake structures are proposed. Under average conditions, 27,160 gpm of cooling water would be lost through consumptive use (evaporation) during operation. Closed-cycle cooling towers would dissipate heat from the cooling and service water systems. Water released from proposed Units 2 and 3 would flow through a pipeline to a discharge structure (outfall) on the Parr Reservoir.

The DEIS states that an assessment of the water-quality impacts on the Parr Reservoir and the Broad River from discharge of Units 2 and 3 showed that both the thermal impacts and the impact of discharging solutes and solids concentrated through evaporation in the cooling towers would be minimal and localized to the zone defined by the thermal plume, (page 7-13). The FEIS should

clarify if the thermal discharge will meet state water quality standards or whether they will need to apply for a Clean Water Act section 316(a) thermal variance (which will require a demonstration that any alternative limit is more stringent than necessary to propagate a balanced, indigenous population in the Parr Reservoir).

In addition, the FEIS should contain detailed information regarding compliance with Clean Water Act section 316(b) cooling water intake structure requirements for both the existing cooling water intake structure for Unit 1 and proposed new cooling water intake structures for Units 2 and 3. The discussion should address the integration of existing operations and infrastructure with the operations and infrastructure with the new units. The 316(b) New Facility Rule (40 CFR Part 125 Subpart I) compliance discussion will also need to address the preservation of the natural thermal stratification in the Monticello Reservoir.

Furthermore, the FEIS should also address any additional surface water withdrawal concerns raised by the recent passage of South Carolina's Water Withdrawal Act (H.452).

Drinking water standards

Groundwater sampling data showed levels exceeding SCHEC drinking water standards regarding nonradiological parameters (in 2007) and Gross Alpha radiation (in 2008). The FEIS should clarify whether the exceedance of SCDHEC nonradiological drinking water standards is related to the existing VCSNS Nuclear Station.

Based on the SCDHEC groundwater sampling data in the vicinity of proposed VCSNS Units 2 and 3, groundwater exceeded the SCDHEC State Drinking Water standards in at least one well during a sampling round for the following analyses: sulfates, total dissolved solids, turbidity, total coliform, cadmium, iron, lead, and pH.

The DEIS states that "*Baseline nonradiological groundwater quality was established around the proposed VCSNS Units 2 and 3 location by monitoring that consisted of one round of sampling from nine wells in late August/early September 2006 for a subset of analyses (SCE&G 2009a) and more detailed water-quality analyses from eight wells during the second half of 2007. The 2007 water-quality monitoring consisted of one sampling round for four wells, two sampling rounds for three wells, and three sampling rounds for one well (SCE&G 2009a, ER Table 2.3-36, which was updated in SCE&G 2009q with water-quality criteria). The detailed water-quality monitoring results from 2007 were compared to SCDHEC drinking-water standards (SCE&G 2009a, ER Table 2.3-36 updated in SCE&G 2009q). These standards (Class GB) are available in R.61-68, Water Classifications & Standards (SCDHEC 2008a).*"

The DEIS references the "*DHEC Groundwater and Surface Water Screening Project for Radioactive Constituents around SC Nuclear Power Plants (2009).*" The document describes January and July 2008 groundwater and surface water sampling in the vicinity of VCSNS Nuclear Station; 12 samples total. Tritium was detected in two onsite monitoring wells at levels of 519-2,880 picocuries per liter of water (pCi/L) and in two surface water samples at levels of 248-254 pCi/L. We note that these levels are below the drinking water MCL (20,000 pCi/L as an annual

average). The DEIS mentions that the potential source of tritium was the permitted disposal of condensate polisher resin in the area in 1994.

Gross Alpha radiation was detected in two groundwater samples; one of these samples had levels exceeding the EPA safe drinking water MCL of 15 pCi/L (32.8 pCi/L). This well was sampled again on July 24, 2008 and no Gross Alpha radiation was detected in the follow-up analysis. The FEIS should include updated sampling information, if available.

Aquatic resources

Water intake and consumption impacts on aquatic biota are areas of concern. These impacts are related to the relative amount of water drawn from the Monticello Reservoir (cooling water source), and the potential for small fish and shellfish impingement on the intake screens or entrainment in the cooling-water system. The DEIS describes the results of studies regarding impingement related to existing Unit 1. Since new intakes will be constructed for Units 2 and 3, increased water intake and consumption will occur.

EPA recommends the applicant use a mesh size for the traveling screens for intake cooling water that is appropriate for the size of eggs, larvae, and juveniles of all fish to be protected at the site. The DEIS states that, for the cooling water intake structure for Units 2 and 3, the *“designed through-screen velocity will be less than or equal to 0.5 feet per second (fps) at a minimum elevation of 414 ft Northern American Vertical Datum of 1988.”*

EPA determined that *maximum* design intake screen velocity should be less than or equal to 0.5 feet per second in order to reduce impingement of fish. Therefore, the DEIS should specifically address whether the maximum designed intake velocity will be less than 0.5 fps. Surface water withdrawal impacts and impacts to aquatic species during drought conditions are also a concern.

The DEIS also acknowledges that thermal, chemical, and physical effects associated with station blowdown into the Parr Reservoir have the potential to affect the distribution and abundance of some aquatic species. Monitoring should be in accordance with the NPDES Permit.

In addition, stormwater management structures should be designed to prevent introduction of sediments and pollutants into onsite waterbodies and waterways crossed by transmission-line corridors, in order to avoid injury to aquatic biota. The design and operation of the stormwater systems for the proposed VCSNS Units 2 and 3 must comply with NPDES stormwater regulations administered by the SCDHEC.

Endangered Species

The DEIS states that *“No areas designated by FWS as critical habitat exist at the VCSNS site,”* and that SCE&G conducted surveys for threatened and endangered species at the site and found none.

SCE&G stated it will perform detailed ecological surveys for Federal and State-listed threatened and endangered species along the transmission line routes as part of the permitting process prior

to construction. Updated information regarding consultations with the U.S. Fish and Wildlife Service (FWS) and updated ecological survey results should be included in the FEIS.

Historic Preservation

We appreciate the thorough discussion of cultural and historic resources in the DEIS. The DEIS states that SCE&G has agreed to enter into a management agreement with the SHPO to formalize avoidance and protective measures in response to the SHPO's request for a Programmatic Agreement. We also note SCE&G's cultural resources awareness training and inadvertent discovery procedure training for staff working at the site. Consultation between SCE&G and the SHPO regarding the management agreement is ongoing, and the FEIS should include an update of these coordination activities.

Environmental Justice (EJ)

The DEIS states that impacts from the project to EJ communities would be small, and that no unavoidable adverse impacts would occur (Table 10-2). The DEIS (Volume 1, page 10-18) lists benefits of expansion of the VCSNS Nuclear Station, citing maintaining a supply of electricity for consumers, economic stability and growth, societal benefits, fuel diversity, regional productivity, and tax revenue. However, clarification is needed in the FEIS regarding EJ information.

The DEIS examines demographics within Fairfield, Newberry, Lexington, and Richland Counties, as well as the environmental and socioeconomic impacts to minority and low-income populations up to 50 miles from the VCSNS site. Using 2000 Census Data, the DEIS estimated there were 240 block groups with minority populations that exceeded the state or county average by 20% or greater, and 217 block groups with minority populations of 50 percent or greater. In addition, 54 block groups contained low-income populations that exceeded the state or county average by 20% or greater, 14 of these block groups included minority populations of 50% or greater.

The DEIS also examined EJ populations within six miles of the VCSNS site and identified three African American block groups within the area, using Census data. However, non-EJ block groups do not appear to have been identified in this vicinity. Low-income populations were also identified within the six-mile area following discussions with local officials. Based on these findings, additional assessment of the proposed project impacts on these EJ populations were conducted. The details of this data should be discussed in more detail in the FEIS, clarifying the methodology of the data obtained from discussions with local officials, and whether these populations may be particularly affected by this project.

According to the DEIS, large projects like the proposed nuclear stations can affect individual communities, surrounding regions and EJ populations. The people most vulnerable to noise, aesthetics, odors, fugitive dust or localized air pollutants and light include residents living adjacent to the VCSNS site in the towns of Jenkinsville and unincorporated Fairfield County. In addition, increased truck traffic and roadway congestion is also expected to moderately affect Jenkinsville residents and those living along area access roads. NRC has proposed potential mitigation measures to address some of the traffic related impacts.

The DEIS identified approximately 104 residents living within a mile of the project site. EPA believes it important to meaningfully engage the affected communities within the vicinity of the site throughout this project regarding issues that have the potential to impact them. For example, the DEIS indicates that pre-construction and post-construction noise is expected to peak at 100 dBA 50-ft from the equipment. According to the DEIS, these activities will be intermittent, but during certain periods could be scheduled for 24-hour days, 7 days a week. SCE&G expects that noise levels experienced by sensitive receptive receptors living approximately a mile from the site will rapidly attenuate to below 50 dBA and that continuous noise will be lower. The review team also concludes that the noise emanating from the project site could be somewhat muffled to surrounding communities due to the existing topography and the associated impacts would not be significant.

While this may be true, EPA recommends that a community advisory group be established with local residents living within the vicinity of the site, along access roads and transmission corridors. This group should be meaningfully engaged in the decision-making process and informed about the project status and changes. This group should meet periodically with the site management during the development and operation of the proposed project to ensure that issues such as noise, traffic, odor, light, community relations and other issues are appropriately addressed. Project planning should include measures to avoid noise and other community impacts to the extent feasible, and to monitor and mitigate unavoidable community impacts.

Community involvement is especially important given that the pre-construction and construction phases will take over ten years to complete, some of the activities will be conducted day and night, seven days a week and could potentially result in adverse community impacts. The FEIS should clarify whether a community advisory group currently exists, whether complaints have been received from the community regarding the existing facility, and how those issues have been addressed.

According to the DEIS, SCE&G plans to use existing transmission lines and facilities where possible. However, six new transmission lines will be required to connect the new units to the grid, requiring 100-foot widening of some existing transmission corridors and the creation of new transmission line corridors. The EJ section of the DEIS does not include estimates of how many residents this is expected to impact, whether these corridors are in potential EJ areas, or what the anticipated impacts would be. This information should be included in the FEIS.

EPA notes that job training will be provided to residents. However, many of the VCSNS jobs will require specialized skills, and less than ten percent of the jobs are expected to be filled by the residents in the host county. NRC and the applicant should make every effort to ensure that residents nearby have an opportunity to receive training and compete for those jobs. In addition, efforts to work with and improve schools within the vicinity of the project site should also continue, to ensure that existing and future generations are being prepared to fill those jobs.

There was no discussion in the socioeconomic or EJ section of the DEIS regarding potential utility rate increases for area residents, and resulting potential impacts on low-income and minority populations. This issue should be discussed in the FEIS.

In addition, the FEIS should include a discussion of the impacts of the sanitary waste treatment facility, including potential impacts on the community, clarifying whether there could be EJ impacts resulting from effluent discharging to any of the potential discharge locations. The FEIS should also clarify the basis for the conclusion that subsistence fishing, hunting and gardening would not be impacted by the project. Please clarify whether construction activities would have impacts on access to fishing locations, farmlands and hunting areas.

EPA commends NRC on the demographics analysis and use of community surveys to obtain information. We also appreciate the inclusion of EJ maps depicting low-income and minority populations within the project area (figures 2-18 and 17). In addition, it would be helpful to include a distance key in the map.

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the Draft EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the Draft EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

Appendix D

NRC Progress Report Letter

September 1, 2010

Sadler D. "Sandy" Rupprecht
Vice President, Regulatory Affairs and Strategy
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Subject: PROGRESS REPORT ON THE REVIEW OF THE AP1000 DESIGN
 CERTIFICATION APPLICATION

By letter dated June 21, 2010, the NRC provided Westinghouse the review schedule for the balance of the AP1000 design certification application review. In that letter, the agency indicated that the schedule set an aggressive goal of completing the AP1000 certification rulemaking by the end of the fiscal year 2011 to support the needs of the Vogtle and Summer combined license applications. Further, the agency stated that a number of technical issues remain on the application and that it will require substantial commitment of resources and the attention of senior management to drive technical issues to closure to support the established schedule. Finally, it established two critical milestones that Westinghouse must meet in order to support the agency in meeting the established schedule.

This letter reports on the progress of the AP1000 review and the success in meeting the milestones set forth in the June 21, 2010, letter mentioned above.

By letter dated June 30, 2010, Westinghouse provided a list of the design changes that would be included in Revision 18 of the design certification application. With that document, the complete scope of the design certification amendment is known and the first milestone has been met. Further, Westinghouse and NRC have resolved a substantial number of technical issues associated with the design certification amendment. Westinghouse has provided final or draft responses to a number of outstanding requests for information or in support of the closure of open items by July 30, 2010 as outlined in the established schedule. However, Westinghouse was not able to submit all the necessary documentation for closure of the open technical issues or in support of the necessary design change packages by the established schedule.

As of this progress report, the NRC is reviewing the information submitted by July 30, 2010, and is waiting for the submittal of the documentation supporting the closure of approximately 15 unresolved technical issues or design change packages. Receipt of information for a few issues may take until September 30, 2010.

S. Rupprecht

- 2 -

Any impacts on the overall design certification schedule resulting from the delay in receiving documentation after July 30, 2010, are currently unknown, and will not be completely known until late September. We will discuss any subsequent schedule impacts with Westinghouse as soon as those impacts can be estimated.

Sincerely,

/RA/

David B. Matthews, Director
Division of New Reactor Licensing
Office of New reactors

Docket No.: 52-006

S. Rupprecht

- 2 -

Any impacts on the overall design certification schedule resulting from the delay in receiving documentation after July 30, 2010, are currently unknown, and will not be completely known until late September. We will discuss any subsequent schedule impacts with Westinghouse as soon as those impacts can be estimated.

Sincerely,

/RA/

David B. Matthews, Director
Division of New Reactor Licensing
Office of New reactors

Docket No.: 52-006

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(Revised 06/29/2010)

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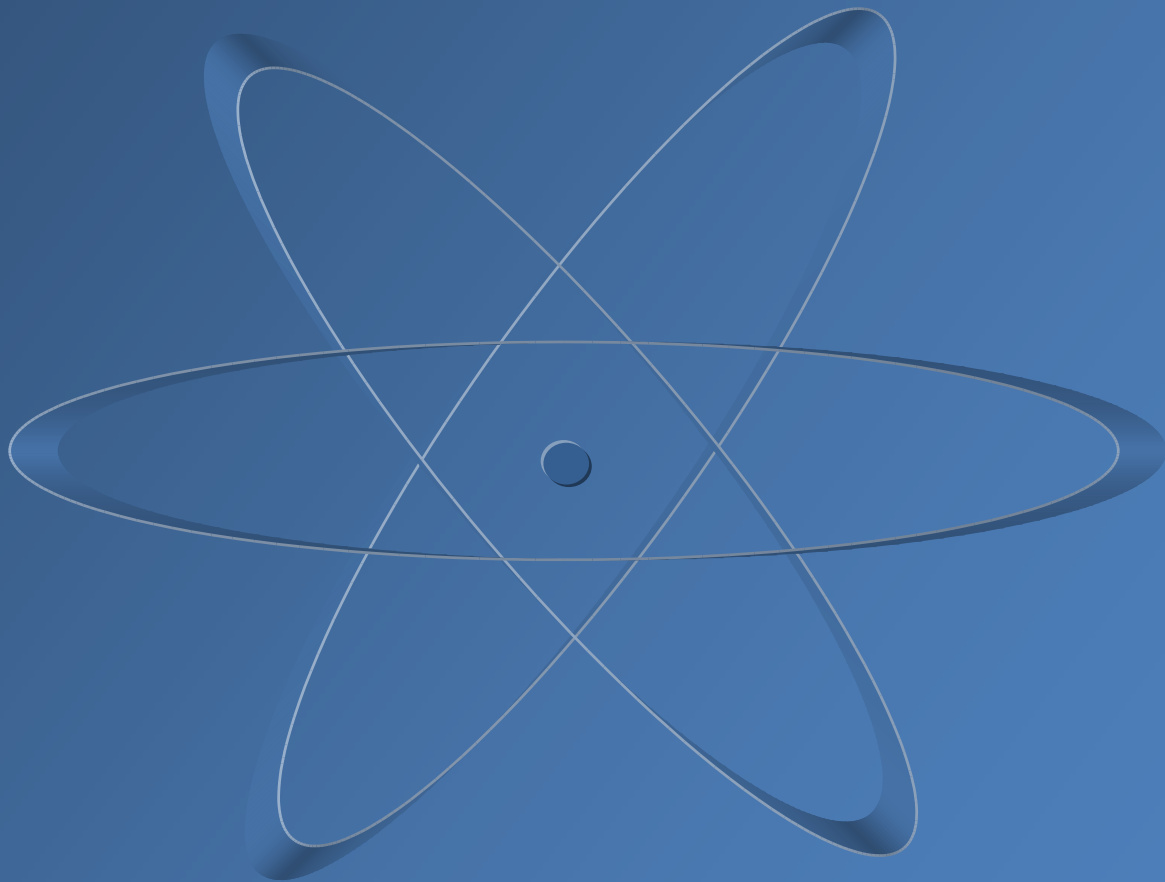
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South Carolina Office of Regulatory Staff
Review of South Carolina Electric & Gas Company's
2010 3rd Quarter Report on
V. C. Summer Units 2 and 3
Status of Construction



January 1, 2011



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Introduction

On March 2, 2009, the Public Service Commission of South Carolina (“Commission”) approved South Carolina Electric & Gas Company’s (“SCE&G” or the “Company”) request for the construction of V.C. Summer Nuclear Station Units 2 and 3 (the “Units”) and the Engineering, Procurement and Construction (“EPC”) Contract. This approval can be found in the Base Load Review Order No. 2009-104(A) filed in Docket 2008-196-E. Subsequently, on January 22, 2010, the Commission approved updated capital cost estimates and construction schedules in Order No. 2010-12, which is filed in Docket 2009-293-E.

SCE&G and the South Carolina Public Service Authority (“Santee Cooper”) are co-owners of the project at 55% and 45%, respectively. The South Carolina Office of Regulatory Staff (“ORS”) has no regulatory oversight of Santee Cooper. The two companies continue to operate jointly to construct the Units under the terms established in their Bridge Agreement. Negotiations continue between the two utilities to establish the terms of a final joint ownership contract. As previously reported in ORS reviews, SCE&G has disclosed that Santee Cooper is reviewing its level of participation in constructing the Units. On September 18, 2010, the The Post and Courier, a Charleston newspaper, indicated that Santee Cooper may seek a partner in its 45% ownership. This article indicates that Santee Cooper does not have a firm date for its decision. As of this review, ORS has no further information regarding this matter.

On November 15th, SCE&G submitted its 2010 3rd Quarter Report (“Report”) related to its construction of the Units. The Report is filed in Commission Docket No. 2008-196-E and covers the quarter ending September 30, 2010. The Company submitted its Report pursuant to S.C. Code Ann. § 58-33-277 (Supp. 2009) of the Base Load Review Act (“BLRA”), which requires the Report to include the following information:

1. Progress of construction of the plant;
2. Updated construction schedules;
3. Schedules of the capital costs incurred including updates to the information required by Section 58-33-270(B)(5);
4. Updated schedules of the anticipated capital costs; and
5. Other information as the Office of Regulatory Staff may require.

With reference to Section 58-33-275(A) of the BLRA, ORS’s review of the Company’s Report focuses on SCE&G’s ability to adhere to (1) the approved construction schedule and (2) the approved capital cost estimates.

Approved Schedule Review

Milestone Schedule

As of September 30, 2010, ORS verified that of the Milestone Schedule's 146 activities:

- 54 milestone activities are complete (includes 53 historical and 1 future milestones)
- 92 milestone activities remain to be completed (includes 2 delayed historical and 90 future milestones)

ORS also verified that during the 3rd quarter of 2010:

- One (1) milestone activity was scheduled to be completed. This milestone was completed seven (7) months early.

As of the end of the 3rd quarter of 2010 ORS verified that:

- None (0) of the milestones fall outside the deviation standards of being delayed up to 18 months or being accelerated up to 24 months.

As of the end of the 3rd quarter of 2010, ORS identified two (2) Caution Milestones. These milestones, which are detailed below, are those that have been delayed ten (10) months or greater:

- **Milestone Activity No. 55** – *Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion – Unit 2*. Delayed 10 months.

This activity was scheduled to be completed on February 28, 2010. Its revised target completion date is December 31, 2010. Doosan, located in South Korea, is the manufacturer for the reactor vessel. This milestone has been delayed to correct a distortion in the upper shell and has been impacted by work scheduling conflicts.

The Company reports to ORS that the causes of the delay have been addressed and SCE&G does not anticipate the delay to impact the receipt of this major component at the site.

- **Milestone Activity No. 80** – *Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2.* Delayed 10 months.

This activity is scheduled to be completed on January 31, 2011. The revised target completion date is November 29, 2011. Mangiarotti, located in Italy, is the manufacturer for the heat exchanger and associated tubing.

The Company reports to ORS that a manufacturing hold was placed on Mangiarotti. This hold caused the delay and has since been lifted. The Company does not anticipate the delay to impact the receipt of this major component at the site.

SCE&G's Milestone Schedule attached to the Report indicates that overall construction is on schedule. ORS's review of the Milestone Schedule does not identify any issues that impact Unit 2 and Unit 3's substantial completion dates of April 1, 2016 and January 1, 2019, respectively. The one (1) work activity scheduled to be completed during the 3rd quarter was completed seven (7) months early.

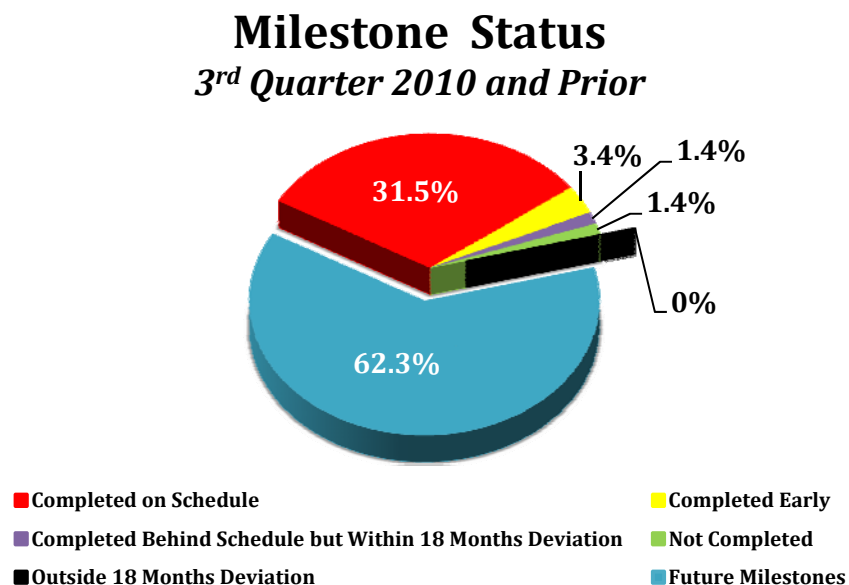
ORS reviewed the invoice associated with the milestone completed during the 3rd quarter and found the invoice amount to be consistent with the EPC payment schedules. Appendix A shows details of the Milestone Schedule as of September 30, 2010.

Table 1 shows the status of the 55 historical milestones and Chart 1 shows the status of all 146 milestones for the 3rd quarter 2010 and prior.¹

Table1:

| Historical Milestones <i>3rd Quarter 2010 and Prior</i> 55 of 146 total Milestones | | |
|---|-----------------|---------------------|
| | # of Milestones | % of All Milestones |
| Completed on Schedule | 46 | 31.5% |
| Completed Early | 5 | 3.4% |
| Completed Behind Schedule but Within 18 Months Deviation | 2 | 1.4% |
| Not Completed | 2 | 1.4% |
| Outside 18 Months Deviation | 0 | 0% |
| Total Historical Milestones | 55 | 37.7% |

Chart 1:



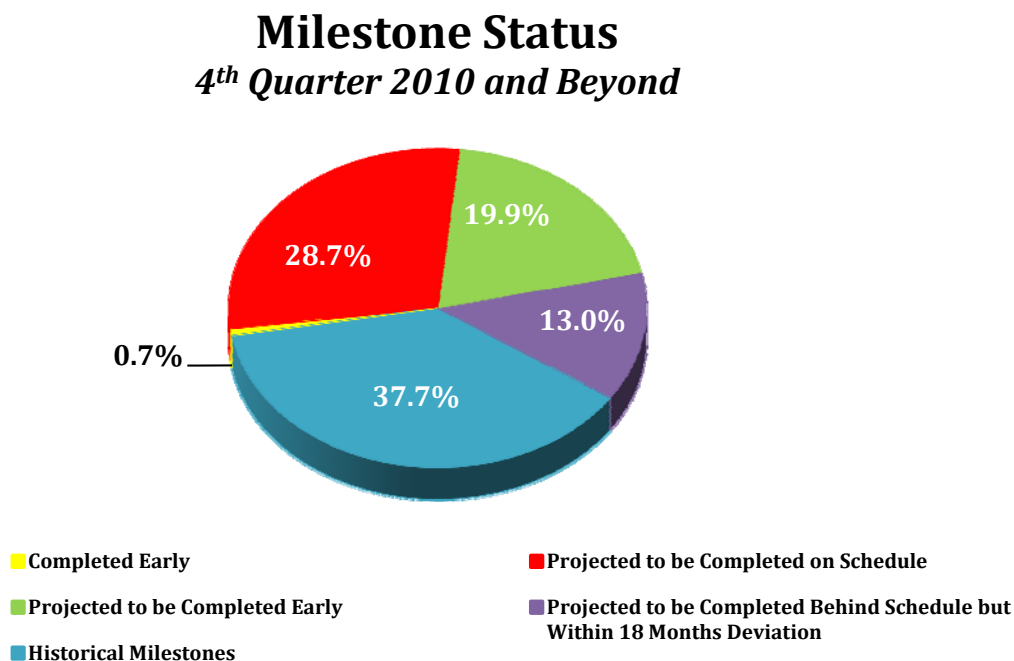
¹ The numbers reported by ORS and SCE&G will vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed July 2, 2010 and the actual completion date is June 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being done on schedule since it was completed within 30 days of the scheduled completion date.

Table 2 shows the status of the 91 future milestones and Chart 2 shows the status of all 146 milestones for the 4th quarter 2010 and beyond.²

Table 2:

| Future Milestones <i>4th Quarter 2010 and Beyond</i> 91 of 146 total Milestones | | |
|--|------------------------|----------------------------|
| | # of Milestones | % of All Milestones |
| Completed Early | 1 | 0.7% |
| Projected to be Completed on Schedule | 42 | 28.7% |
| Projected to be Completed Early | 29 | 19.9% |
| Projected to be Completed Behind Schedule but Within 18 Months Deviation | 19 | 13.0% |
| Total Future Milestones | 91 | 62.3% |

Chart 2:



² The numbers reported by ORS and SCE&G will vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed July 2, 2010 and the actual completion date is June 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being done on schedule since it was completed within 30 days of the scheduled completion date.

Specific Construction Activities

The overall site construction activities are progressing well. The existing construction workforce consists of approximately 800 workers. SCE&G and EPC Contractors account for approximately 15% and 85% of the workforce, respectively. Some of the major construction activities during the 3rd quarter of 2010 are listed below:

- Excavation of the Nuclear Island for Unit 2, which provides the foundation for the reactor, continued. This is the first critical path activity and ORS continues to closely monitor all critical path activities.
- Unit 2 Power Block excavation was progressing ahead of schedule and rock removal began. The Nuclear Regulatory Commission (“NRC”) geological team visited the site in August to observe excavation, mapping and data collection pertaining to the Nuclear Island.
- Earthwork on the table top area – where the AP1000 units will be located – was nearing completion at the 400 foot elevation level.
- The Circulating Water System (CWS) pipe installation was ongoing.
- The Cable Storage Building – Warehouse Building 57 – was completed.
- The section of earthwork grading in the Cooling Tower area above the existing wetlands area was completed.
- The first of two on-site concrete batch plants has been completed and is in operation.
- Construction continued on the Nuclear Learning Center expansion. The center is on target to begin occupancy by the end of 2010.
- Crane rails were delivered and were ready to be set in the Modular Assembly Building. The Modular Assembly Building was approximately 85% complete.
- One hundred twenty five (125) of the foundation shafts in the Switchyard were completed. Also, the installation of the Switchyard grounding grid has begun.
- Work on the foundation for the Heavy Lift Derrick (“Bigge Crane”) continued with steel reinforcement being installed.
- Work continued on the on-site fabrication pads for the Containment Vessel. Meetings were held with the contractor to prepare for the Containment Vessel fabrication activities.

Photographs of 3rd quarter construction activities are shown in Appendix B.

Change Orders

During the 3rd quarter of 2010, Change Order Nos. 6 and 7 were approved by the Company and SCE&G was developing Change Order Nos. 8 and 10.

Change Order No. 6 – approved July 13, 2010 by the Company – substitutes hydraulic nuts (HydraNuts) in place of the standard plant reactor vessel stud tensioners and conventional reactor vessel closure head nuts. This request provides standardization across SCE&G's nuclear fleet and increases the efficiency of reactor vessel maintenance activities.

Change Order No. 7 – approved July 13, 2010 by SCE&G – is related to the engineering effort to redesign the Unit 2 switchyard communication system which interconnects with substations located on St. George transmission lines 1 and 2. The new engineering design will reflect a power line carrier communication system in lieu of the original fiber optic communication system design.

Change Order No. 8 – On August 10, 2010, SCE&G entered into an agreement with the consortium consisting of Westinghouse Electric Company (“WEC”)/Shaw. This agreement permits certain specific items of the EPC Contract that were originally included in the Target Price cost category to be moved to the Fixed Price or Firm Price cost categories.

Change Order No. 10 – provides licenses and software to allow SCE&G direct digital access to WEC's Primavera “live” integrated project schedule without incurring periodic software update costs.

Table 3 details the Change Orders and Amendments.

Table 3:

| Change Orders and Amendments | | | | | |
|------------------------------|---|---|------------------------|---------------|-------------------|
| No. | Summary | Cost Categories Involved | Type of Change | Date Approved | Status |
| 1 | Operator training for WEC Reactor Vessel Systems and Simulator training | Fixed Price with 0% escalation ³ | Owner Directed | 7/22/2009 | Approved |
| 2 | Limited Scope Simulator | Firm | Owner Directed | 9/11/2009 | Approved |
| 3 | Repair of Parr Road | Time and Materials | Owner Directed | 1/21/2010 | Approved |
| 4 | Transfer of Erection of CA20 Module from WEC to Shaw | Target Price work shifting to Firm Price | Contractor Convenience | N/A | Superseded by #8 |
| 5 | <i>*Addition to Change Order #1*</i> Increased training by two weeks | Fixed Price with 0% escalation ³ | Owner Directed | 5/4/2010 | Approved |
| 6 | Hydraulic Nuts | Fixed Price | Owner Directed | 7/13/2010 | Approved |
| 7 | St. George Lines 1 & 2 | Firm and Target Price | Entitlement | 7/13/2010 | Approved |
| 8 | Target to Firm/Fixed Shift | Target, Firm and Fixed Price Categories | Owner Directed | Pending | Under Development |
| 9 | Switchyard Line Reconfiguration ⁴ | Target and Firm Price Categories | Owner Directed | 11/30/10 | Approved |
| 10 | Primavera | Fixed Price with 0% escalation | Owner Directed | Pending | Under Development |

| | | |
|---------------------|---------------------------------------|----------------------|
| Amendment #1 | Includes Change Orders 1 and 2 | Executed on 8/2/2010 |
| Amendment #2 | Will incorporate Change Orders 3, 5-9 | Under Development |

³ Fixed Price with 0% escalation, but applied to Time and Materials Work Allowances by adding a new category for Simulator Instructor training and reducing Startup Support by commensurate amount.

⁴ This Change Order was approved in the 4th Quarter and will be addressed in ORS's review of SCE&G's 4th Quarter Report.

Approved Budget Review

As reported in ORS's 2nd Quarter Review, the South Carolina Supreme Court ruled on August 9, 2010 that SCE&G may not recover "contingency costs" under the BLRA. S.C. Energy Users Comm. vs. South Carolina Pub. Serv. Comm'n, 388 S.C. 486, 697 S.E.2d 587 (2010). Previously, contingency costs had been approved as a capital cost category by the Commission in Order No. 2009-104(A), as modified by Order No. 2010-12. The Supreme Court's ruling removes all contingency costs totaling \$438.293 million from the budget for the Units, thereby reducing the overall approved budget. That is, the total approved SCE&G project commitment (in 2007 dollars) is reduced from \$4.534 billion to \$4.096 billion.

The Supreme Court ruling was issued during the pendency of SCE&G's revised rates request in Commission Docket No. 2010-157-E, which included \$2.277 million in contingency costs spent as of June 30, 2010. The day after the Supreme Court ruling, ORS supplied the Commission with a revised rates filing removing the \$2.277 million in contingency dollars from the revised rates request. Accordingly, the resulting retail revenue requirement was reduced by approximately \$270,000. The Company concurred with ORS's filing by separate letter. It should be noted that Commission Docket No. 2010-157-E is the Company's second request for revised rates. SCE&G's first request for revised rates in Commission Docket No. 2009-211-E contained **no** contingency costs. In summary, the Company is not permitted to recover costs considered "contingency costs" under the BLRA and ratepayers have not paid for any contingency costs through their rates.

As a result of the August 9, 2010 Supreme Court Ruling, on November 15, 2010, the Company filed, concurrently with its Report, a request with the Commission in Docket No. 2010-376-E (the "Filing") to recover approximately \$174 million in capital costs which would have been deducted from the Company's \$438.293 million (in 2007 dollars) budget for contingency costs. The Filing updates the gross construction cost – which includes escalation and Allowance for Funds Used During Construction ("AFUDC") – of the project to show a decrease from \$6.188 billion⁵ to \$5.838 billion, which is an overall reduction of approximately \$350 million in the total cost to construct the Units. SCE&G's Report reflects the removal of the \$438.293 million (in 2007 dollars) in contingency dollars, the request to recover approximately \$174 million (in 2007 dollars) in capital costs and the corresponding updated gross construction cost of the project.

ORS's budget review includes an analysis of the 3rd quarter 2010 cost estimates, project cash flow, escalation and AFUDC.

⁵ \$6.188 billion reflects the removal of the contingency dollars. The gross construction cost per Commission Order No. 2010-12 is \$6.875 billion.

Cost Estimates

To determine how closely the Company adheres to the budget approved by the Commission in Order No. 2010-12, ORS evaluates nine (9) major cost categories for variances. These cost categories are:

- Fixed with Adjustment at 0%
- Firm with Fixed Adjustment A
- Firm with Fixed Adjustment B
- Firm with Indexed Adjustment
- Actual Craft Wages
- Non-Labor Cost
- Time & Materials
- Owners Costs
- Transmission Projects

ORS found multiple variances which were due to various project changes (e.g., shifts in work scopes, payment timetables, construction schedule adjustments, change orders, etc). As of the end of the 3rd quarter of 2010, the cumulative impact of these changes increases the total base project cost⁶ (in 2007 dollars) from the approved \$4.096 billion to \$4.270 billion, which is an increase of approximately \$174 million – the amount SCE&G seeks to recover in its Filing.

Project Cash Flow

In its Report, the Company also compares its current project cash flow to the cash flow schedule approved by the Commission in Order 2010-12. To produce a common basis for the comparison, SCE&G adjusts the approved cash flow schedule to reflect the current escalation rates. As of September 30, 2010, the comparison shows the yearly maximum annual variance above and below the approved cash flow schedule through the life of the project. The comparison also shows the cumulative project cash flow is forecasted to be roughly \$44.4 million over budget at the end of 2010. Also, at the end of the project in 2018, the cumulative project cash flow is forecasted to be approximately \$264 million over budget.

⁶ Base project cost does not include contingency dollars.

Table 4 shows the annual and cumulative project cash flows as compared to those approved in Order No. 2010-12.

Table 4:

| Project Cash Flow Comparison | | | |
|---------------------------------------|------|------------------------|----------------------------|
| <i>\$'s in Thousands ⁷</i> | | | |
| | | Annual Over/(Under) | Cumulative Over/(Under) |
| Actual | 2007 | - | - |
| | 2008 | \$0 | \$0 |
| | 2009 | (\$3,886) | (\$3,886) |
| Projected | 2010 | \$48,286 | \$44,400 |
| | 2011 | (\$35,917) | \$8,483 |
| | 2012 | \$78,635 | \$87,118 |
| | 2013 | \$31,082 | \$118,201 |
| | 2014 | \$5,477 | \$123,677 |
| | 2015 | \$75,647 | \$199,325 |
| | 2016 | \$15,408 | \$214,733 |
| | 2017 | \$16,382 | \$231,115 |
| | 2018 | \$33,214 | \$264,329 |

In summary, the Report shows an increase in the total base project cost of approximately \$174 million (in 2007 dollars) resulting in an additional project cash flow requirement of approximately \$264 million necessary to complete the project in 2018. The Company seeks to reconcile the base project cost requirements and the project cash flow deficiency in its Filing.

⁷ There will be slight variances in these numbers due to rounding.

AFUDC and Escalation

The forecasted AFUDC for the project through the 3rd quarter of 2010 is \$302.775 million and is based on a forecasted 7.10% AFUDC rate. This is a decrease of approximately \$26.990 million from the Company's 2010 2nd Quarter Report.

As reported by ORS in its review of the SCE&G's 2010 2nd Quarter Report, the decline in the five-year average escalation rates reduce the projected project cash flow. Current worldwide economic conditions continue to reduce the projected cost escalation of the project. Currently, the U.S. inflation rate forecast indicates a decrease in escalation for the remainder of 2010. Primarily due to the decrease in escalation rates, the overall project is considered under budget. More specifically, as of September 30, 2010, the forecast of gross construction cost of the plant is \$5.838 billion as compared to the approved gross construction cost of \$6.188 billion which reflects an approximate \$350 million overall reduction in the cost of the project.

Additional ORS Monitoring Activities

ORS continually performs the following activities as well as other monitoring activities as deemed necessary.

- Audits capital cost expenditures and resulting AFUDC in Construction Work in Progress
- Physically observes construction activities
- Performs bi-monthly on-site review of construction documents
- Holds monthly update meetings with SCE&G
- Meets quarterly with representatives of WEC
- Participates in NRC conference calls
- Attends NRC Public Meetings regarding SCE&G Combined License Application
- Attends NRC Advisory Committee on Reactor Safeguards ("ACRS") meetings

Notable Activities Occurring after September 30, 2010

The BLRA allows SCE&G 45 days from the end of the current quarter to file its Report. Items of importance that occurred subsequent to the closing of the 3rd quarter are reported below.

As a result of the August 9, 2010 South Carolina Supreme Court Ruling, the Company's November 15, 2010 Filing with the Commission seeks to recover approximately \$174 million in capital costs which would have been included in the Company's budget for contingency costs. The Commission has scheduled a hearing to be held on April 4, 2011.

As mentioned in previous ORS reviews of the Company's Quarterly Reports, SCE&G has negotiated with Shaw to use a single, large Bigge Crane as opposed to two smaller cranes contemplated in the EPC Contract. SCE&G reports to ORS that Change Order No. 8 satisfies the Company's concerns regarding the use of a single large crane. The dollars associated with Change Order No. 8 are included in the Company's Filing. ORS will evaluate Change Order No. 8 as a Party to the Filing.

On October 19, 2010, Fairfield County and Midlands Technical College (MTC) held a Ribbon Cutting and Open House for the new Fairfield QuickJobs Center on the MTC Fairfield Campus in Winnsboro, SC. SCE&G participated in the development of the Center to enhance the pool of potential project workers from Winnsboro. The Center provides educational programs that can prepare students for skilled positions.

The NRC issued a Notice of Violation ("NOV") to WEC in response to the NRC inspection of WEC's Aircraft Impact Assessment ("AIA") on October 28, 2010. Specifically, the NOV states that WEC did not use realistic analyses for certain aspects of its AIA and did not fully identify and incorporate into the design those design features and functional capabilities credited. On November 12, 2010, WEC replied to NRC stating that it had taken corrective actions to respond to the NOV. On November 23, 2010, the NRC responded to the WEC reply stating that it had no further questions. This regulatory correspondence is attached as Appendix C.

The NRC issued a Revised Review Schedule to SCE&G on October 29, 2010. The revised NRC schedule supports issuance of the final safety evaluation report in June 2011 and the final environmental impact statement in April 2011. The NRC letter, which updates and replaces previously established schedule dates, is attached as Appendix D.

On December 13, 2010, the ACRS reported to the NRC stating: "we conclude that there is reasonable assurance that the revised design can be built and operated without undue risk to the health and safety of the public." The ACRS provides reputable – but nonbinding – input to

the NRC. The NRC will consider the ACRS findings before deciding whether to approve the rulemaking for the revised AP1000 design. The ACRS report is attached as Appendix E.

Based on ORS's monitoring of the federal licensing activities, Table 5 provides the most current dates for the review of SCE&G's combined license application.

Table 5:

| Review Schedule for SCE&G's Combined License Application | | |
|---|--|--------------------------------|
| Key Milestone | | Completion Date |
| Application | | |
| Application Submitted | | Completed - 3/27/2008 |
| Safety Review | | |
| Phase A | Requests for Additional Information (RAIs) and Supplemental RAIs | Completed - 9/10/2009 |
| Phase B | Advanced Final Safety Evaluation Report (SER) without Open Items | Completed - 12/10/2010 |
| Phase C | ACRS Review of Advanced Final SER | Target - May 2011 |
| Phase D | Final SER Issued | Target - June 2011 |
| Environmental Review | | |
| Phase 1 | Environmental Impact Statement scoping report issued | Completed - 07/15/2009 |
| Phase 2 | Draft Environmental Impact Statement (DEIS) | Completed - 04/16/2010 |
| Phase 3 | Response to Public Comments on DEIS | Completed - August 2010 |
| Phase 4 | Final Environmental Impact Statement | Target - April 2011 |
| Hearing | | |
| NRC holds Mandatory hearing | | Target - August 2011 |
| License | | |
| NRC Rulemaking Decision | | Target - September 2011 |
| NRC Issuance of Combined License | | Target - November 2011 |

SCE&G's 2010 4th Quarter Report is due 45 days after December 31, 2010. ORS expects to continue publishing a review evaluating SCE&G's quarterly report.

Appendix A

Detailed Milestone Schedule as of September 30, 2010

| Key: | Completed Prior to Q3-10 | Current Quarter | Scheduled to Be Completed Q4-10 | ORS Caution Milestone |
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q3-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|--------------------|---|---|---|--|---|------------------------------|---------------------------------|
| 1 | Approve Engineering, Procurement and Construction Agreement | 5/23/2008 | | No | No | 5/23/2008 | |
| 2 | Issue Purchase Orders ("P.O.") to Nuclear Component Fabricators for Units 2 and 3 Containment Vessels | 12/3/2008 | | No | No | 12/3/2008 | |
| 3 | Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator – First Payment - Unit 2 | 8/31/2008 | | No | No | 8/18/2008 | |
| 4 | Contractor Issue P.O. to Accumulator Tank Fabricator – Unit 2 | 7/31/2008 | | No | No | 7/31/2008 | |
| 5 | Contractor Issue P.O. to Core Makeup Tank Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |
| 6 | Contractor Issue P.O. to Squib Valve Fabricator- Units 2 & 3 | 3/31/2009 | | No | No | 3/31/2009 | |
| 7 | Contractor Issue P.O. to Steam Generator Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 8 | Contractor Issue Long Lead Material P.O. to Reactor Coolant Pump Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 9 | Contractor Issue P.O. to Pressurizer Fabricator - Units 2 & 3 | 8/31/2008 | | No | No | 8/18/2008 | |
| 10 | Contractor Issue P.O. to Reactor Coolant Loop Pipe Fabricator - First Payment- Units 2 & 3 | 6/30/2008 | | No | No | 6/20/2008 | |

| Key: | Completed Prior to Q3-10 | Current Quarter | Scheduled to Be Completed Q4-10 | ORS Caution Milestone |
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q3-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---|--|---|------------------------------|---------------------------------|
| 11 | Reactor Vessel Internals – Issue Long Lead Material P.O. to Fabricator Units 2 & 3 | 11/21/2008 | | No | No | 11/21/2008 | |
| 12 | Contractor Issue Long Lead Material - P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 13 | Contractor Issue P.O. to Integrated Head Package Fabricator - Units 2 & 3 | 7/31/2009 | | No | No | 7/31/2009 | |
| 14 | Control Rod Drive Mechanism – Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 - First Payment | 6/21/2008 | | No | No | 6/21/2008 | |
| 15 | Issue P.O.s to Nuclear Component Fabricators for Nuclear Island Structural CA20 Modules | 7/31/2009 | | No | No | 8/28/2009 | |
| 16 | Start Site Specific and Balance of Plant Detailed Design | 9/11/2007 | | No | No | 9/11/2007 | |
| 17 | Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 18 | Steam Generator - Issue Final P.O. to Fabricator for Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 19 | Reactor Vessel Internals - Contractor Issue P.O. for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3 | 1/31/2010 | | No | No | 1/29/2010 | |
| 20 | Contractor Issue Final P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |

| Key: | Completed Prior to Q3-10 | Current Quarter | Scheduled to Be Completed Q4-10 | ORS Caution Milestone |
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q3-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|--------------------|--|---|---|--|---|------------------------------|---------------------------------|
| 21 | Variable Frequency Drive Fabricator Issue Transformer P.O. - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 22 | Start Clearing, Grubbing and Grading | 1/26/2009 | | No | No | 1/26/2009 | |
| 23 | Core Makeup Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 24 | Accumulator Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 25 | Pressurizer Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 26 | Reactor Coolant Loop Pipe - Contractor Issue P.O. to Fabricator - Second Payment - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 27 | Integrated Head Package - Issue P.O. to Fabricator - Units 2 & 3 - Second Payment | 7/31/2009 | | No | No | 7/31/2009 | |
| 28 | Control Rod Drive Mechanism - Contractor Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 29 | Contractor Issue P.O. to Passive Residual Heat Removal Exchanger Fabricator - Second Payment - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 30 | Start Parr Road Intersection Work | 2/13/2009 | | No | No | 2/13/2009 | |

| Key: | Completed Prior to Q3-10 | Current Quarter | Scheduled to Be Completed Q4-10 | ORS Caution Milestone |
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|

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|-----------------|---|---|---|--|---|------------------------------|---------------------------------|
| 31 | Reactor Coolant Pump - Issue Final P.O. to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 32 | Integrated Heat Packages Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2009 | | No | No | 10/1/2009 | 1 Month Early |
| 33 | Design Finalization Payment 3 | 1/31/2009 | | No | No | 1/30/2009 | |
| 34 | Start Site Development | 6/23/2008 | | No | No | 6/23/2008 | |
| 35 | Contractor Issue P.O. to Turbine Generator Fabricator - Units 2 & 3 | 2/28/2009 | | No | No | 2/19/2009 | |
| 36 | Contractor Issue P.O. to Main Transformers Fabricator - Units 2 & 3 | 9/30/2009 | | No | No | 9/25/2009 | |
| 37 | Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3 | 11/30/2010 | 12/31/2010 | No | No | | Delayed 1 Month |
| 38 | Design Finalization Payment 4 | 4/30/2009 | | No | No | 4/30/2009 | |
| 39 | Turbine Generator Fabricator Issue P.O. for Condenser Material - Unit 2 | 8/31/2009 | | No | No | 8/28/2009 | |
| 40 | Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |

| | | | | |
|-------------|-------------------------------------|----------------------------|--|----------------------------------|
| Key: | Completed Prior to Q3-10 | Current Quarter | Scheduled to Be Completed Q4-10 | ORS Caution Milestone |
|-------------|-------------------------------------|----------------------------|--|----------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q3-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 41 | Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3 | 5/31/2010 | | No | No | 5/27/2010 | |
| 42 | Design Finalization Payment 5 | 7/31/2009 | | No | No | 7/31/2009 | |
| 43 | Start Erection of Construction Buildings Including Craft Facilities for Personnel, Tools, Equipment; First Aid Facilities; Field Offices for Site Management and Support Personnel; Temporary Warehouses; and Construction Hiring Office | 10/9/2009 | | No | No | 12/18/2009 | Delayed 2 Months |
| 44 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2 | 7/31/2009 | | No | No | 8/28/2009 | |
| 45 | Design Finalization Payment 6 | 10/31/2009 | | No | No | 10/7/2009 | |
| 46 | Instrumentation and Control/Simulator - Contractor Issue P.O. to Subcontractor for Radiation Monitor System - Units 2 & 3 | 12/31/2009 | | No | No | 12/17/2009 | |
| 47 | Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 2/28/2011 | No | No | | 4 Months Early |
| 48 | Turbine Generator Fabricator Issue P.O. for Moisture Separator Reheater/Feedwater Heater Material Unit 2 | 4/30/2010 | | No | No | 4/30/2010 | |
| 49 | Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2 | 4/30/2010 | | No | No | 2/18/2010 | 2 Months Early |

| Key: | Completed Prior to Q3-10 | Current Quarter | Scheduled to Be Completed Q4-10 | ORS Caution Milestone |
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|

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|--------------------|---|---|---|--|---|------------------------------|-----------------------------------|
| 50 | Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2 | 10/31/2011 | 10/31/2011 | No | No | | |
| 51 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2 | 6/30/2009 | | No | No | 6/30/2009 | |
| 52 | Contractor Notified That Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2 | 11/30/2010 | 11/30/2010 | No | No | | |
| 53 | Start Excavation and Foundation Work for the Standard Plant for Unit 2 | 3/15/2010 | | No | No | 3/15/2010 | |
| 54 | Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2 | 2/28/2010 | | No | No | 4/30/2010 | Delayed 2 Months |
| 55 | Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2 | 2/28/2010 | 12/31/2010 | No | No | | Delayed 10 Months |
| 56 | Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2 | 5/31/2010 | | No | No | 5/17/2010 | |
| 57 | Complete Preparations for Receiving the First Module On Site for Unit 2 | 8/18/2010 | | No | No | 1/22/2010 | Completed - 7 Months Early |
| 58 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2 | 4/30/2010 | | No | No | 4/21/2010 | |
| 59 | Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2 | 11/30/2010 | 11/30/2010 | No | No | | |

| Key: | Completed Prior to Q3-10 | Current Quarter | Scheduled to Be Completed Q4-10 | ORS Caution Milestone |
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 60 | Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2 | 12/31/2010 | 2/28/2011 | No | No | | Delayed 2 Months |
| 61 | Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2 | 5/31/2011 | 2/29/2012 | No | No | | Delayed 9 Months |
| 62 | Polar Crane Fabricator Issue P.O. for Main Hoist Drum and Wire Rope - Units 2 & 3 | 2/28/2011 | 2/28/2011 | No | No | | |
| 63 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3 | 6/30/2011 | 6/30/2011 | No | No | | |
| 64 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2 | 10/31/2011 | 1/31/2012 | No | No | | Delayed 3 Months |
| 65 | Start Placement of Mud Mat for Unit 2 | 7/14/2011 | 7/14/2011 | No | No | | |
| 66 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2 | 1/31/2011 | | No | No | 9/28/2010 | Completed - 4 Months Early |
| 67 | Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2 | 10/31/2010 | 3/31/2011 | No | No | | Delayed 5 Months |
| 68 | Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3 | 2/28/2012 | 2/28/2012 | No | No | | |

| Key: | Completed Prior to Q3-10 | Current Quarter | Scheduled to Be Completed Q4-10 | ORS Caution Milestone |
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q3-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---|--|---|------------------------------|---------------------------------|
| 69 | Begin Unit 2 First Nuclear Concrete Placement | 10/3/2011 | 10/1/2011 | No | No | | |
| 70 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2 | 9/30/2011 | 9/30/2011 | No | No | | |
| 71 | Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 2/28/2011 | No | No | | 4 Months Early |
| 72 | Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2 | 5/31/2011 | 7/31/2011 | No | No | | Delayed 2 Months |
| 73 | Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2 | 12/31/2012 | 8/31/2011 | No | No | | 16 Months Early |
| 74 | Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2 | 12/31/2011 | 12/31/2011 | No | No | | |
| 75 | Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2 ¹ | 10/31/2010 | 3/31/2011 | No | No | | Delayed 5 Months |
| 76 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2 | 6/30/2011 | 9/30/2011 | No | No | | Delayed 3 Months |
| 77 | Design Finalization Payment 14 | 10/31/2011 | 10/31/2011 | No | No | | |

¹ Previously this milestone incorrectly described welding of Upper & Intermediate Shells and was a duplication of #67. In its 3Q-10 Report SCE&G updated the milestone to accurately reflect work on the bottom head.

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|-----------------|---|---|---|--|---|------------------------------|---------------------------------|
| 78 | Set Module CA04 For Unit 2 | 1/27/2012 | 1/27/2012 | No | No | | |
| 79 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2 | 6/30/2010 | 1/31/2011 | No | No | | Delayed 7 Months |
| 80 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2 | 1/31/2011 | 11/29/2011 | No | No | | Delayed 10 Months |
| 81 | Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2 | 2/28/2012 | 10/31/2012 | No | No | | Delayed 8 Months |
| 82 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3 | 8/31/2013 | 7/31/2013 | No | No | | 1 Month Early |
| 83 | Set Containment Vessel Ring #1 for Unit 2 | 4/3/2012 | 4/3/2012 | No | No | | |
| 84 | Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2 | 3/31/2012 | 9/30/2011 | No | No | | 6 Months Early |
| 85 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3 | 8/31/2013 | 1/31/2013 | No | No | | 7 Months Early |
| 86 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3 | 9/30/2012 | 9/30/2012 | No | No | | |

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|-----------------|---|---|---|--|---|------------------------------|---------------------------------|
| 87 | Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3 | 1/31/2013 | 11/30/2011 | No | No | | 14 Months Early |
| 88 | Set Nuclear Island Structural Module CA03 for Unit 2 | 8/30/2012 | 8/30/2012 | No | No | | |
| 89 | Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2 | 5/31/2012 | 8/31/2012 | No | No | | Delayed 3 Months |
| 90 | Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 12/31/2012 | 12/31/2012 | No | No | | |
| 91 | Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2 | 7/31/2012 | 3/31/2013 | No | No | | Delayed 8 Months |
| 92 | Start Containment Large Bore Pipe Supports for Unit 2 | 4/9/2012 | 4/5/2012 | No | No | | |
| 93 | Integrated Head Package - Shipment of Equipment to Site - Unit 2 | 10/31/2012 | 2/28/2013 | No | No | | Delayed 4 Months |
| 94 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2 | 11/30/2012 | 10/31/2012 | No | No | | 1 Month Early |
| 95 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3 | 5/31/2013 | 4/30/2013 | No | No | | 1 Month Early |

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|------|-----------------------------|--------------------|---------------------------------------|--------------------------|
|------|-----------------------------|--------------------|---------------------------------------|--------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q3-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 96 | Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2 | 5/31/2012 | 7/31/2012 | No | No | | Delayed 2 Months |
| 97 | Start Concrete Fill of Nuclear Island Structural Modules CA01 and CA02 for Unit 2 | 2/26/2013 | 2/26/2013 | No | No | | |
| 98 | Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2 | 4/30/2012 | 2/28/2012 | No | No | | 2 Months Early |
| 99 | Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2 | 2/28/2013 | 8/31/2012 | No | No | | 6 Months Early |
| 100 | Deliver Reactor Vessel Internals to Port of Export - Unit 2 | 7/31/2013 | 7/31/2013 | No | No | | |
| 101 | Set Unit 2 Containment Vessel #3 | 4/17/2013 | 4/17/2013 | No | No | | |
| 102 | Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2 | 3/31/2013 | 2/28/2013 | No | No | | 1 Month Early |
| 103 | Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2 | 4/30/2013 | 4/30/2013 | No | No | | |
| 104 | Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 2/28/2014 | 2/28/2013 | No | No | | 12 Months Early |

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|-----------------|--|---|---|--|---|------------------------------|---------------------------------|
| 105 | Polar Crane - Shipment of Equipment to Site - Unit 2 | 5/31/2013 | 11/30/2013 | No | No | | Delayed 6 Months |
| 106 | Receive Unit 2 Reactor Vessel On Site From Fabricator | 5/20/2013 | 5/20/2013 | No | No | | |
| 107 | Set Unit 2 Reactor Vessel | 6/18/2013 | 6/18/2013 | No | No | | |
| 108 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3 | 12/31/2013 | 11/30/2013 | No | No | | 1 Month Early |
| 109 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3 | 8/31/2014 | 2/28/2014 | No | No | | 6 Months Early |
| 110 | Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2 | 9/30/2013 | 9/30/2013 | No | No | | |
| 111 | Place First Nuclear Concrete for Unit 3 | 8/1/2013 | 8/1/2013 | No | No | | |
| 112 | Set Unit 2 Steam Generator | 9/9/2013 | 9/9/2013 | No | No | | |
| 113 | Main Transformers Ready to Ship - Unit 2 | 9/30/2013 | 2/28/2013 | No | No | | 7 Months Early |

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|-----------------|---|---|---|--|---|------------------------------|---------------------------------|
| 114 | Complete Unit 3 Steam Generator Hydrotest At Fabricator | 2/28/2014 | 3/31/2014 | No | No | | Delayed 1 Month |
| 115 | Set Unit 2 Containment Vessel Bottom Head on Basemat Legs | 11/21/2011 | 11/21/2011 | No | No | | |
| 116 | Set Unit 2 Pressurizer Vessel | 1/24/2014 | 1/24/2014 | No | No | | |
| 117 | Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3 | 2/28/2015 | 3/31/2015 | No | No | | Delayed 1 Month |
| 118 | Deliver Reactor Vessel Internals to Port of Export - Unit 3 | 6/30/2015 | 6/30/2015 | No | No | | |
| 119 | Main Transformers Fabricator Issue P.O. for Material - Unit 3 | 4/30/2014 | 4/30/2014 | No | No | | |
| 120 | Complete Welding of Unit 2 Passive Residual Heat Removal System Piping | 3/19/2014 | 3/19/2014 | No | No | | |
| 121 | Steam Generator Contractor Acceptance of Equipment At Port of Entry - Unit 3 | 4/30/2015 | 1/31/2015 | No | No | | 3 Months Early |
| 122 | Refueling Machine - Shipment of Equipment to Site - Unit 3 | 5/31/2014 | 5/31/2014 | No | No | | |
| 123 | Set Unit 2 Polar Crane | 4/3/2014 | 4/3/2014 | No | No | | |

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|-----------------|---|---|---|--|---|------------------------------|---------------------------------|
| 124 | Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3 | 6/30/2015 | 6/30/2015 | No | No | | |
| 125 | Main Transformers Ready to Ship - Unit 3 | 9/30/2014 | 6/30/2015 | No | No | | Delayed 9 Months |
| 126 | Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3 | 12/31/2014 | 6/30/2014 | No | No | | 6 Months Early |
| 127 | Start Electrical Cable Pulling in Unit 2 Auxiliary Building | 12/26/2014 | 12/18/2014 | No | No | | |
| 128 | Complete Unit 2 Reactor Coolant System Cold Hydro | 8/3/2015 | 7/3/2015 | No | No | | 1 Month Early |
| 129 | Activate Class 1E DC Power in Unit 2 Auxiliary Building | 3/5/2015 | 2/25/2015 | No | No | | |
| 130 | Complete Unit 2 Hot Functional Test | 9/21/2015 | 9/21/2015 | No | No | | |
| 131 | Install Unit 3 Ring 3 for Containment Vessel | 7/30/2015 | 2/19/2015 | No | No | | 5 Months Early |
| 132 | Load Unit 2 Nuclear Fuel | 10/28/2015 | 10/2/2015 | No | No | | |
| 133 | Unit 2 Substantial Completion | 4/1/2016 | 4/1/2016 | No | No | | |

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|--------------------|---|---|---|--|---|------------------------------|---------------------------------|
| 134 | Set Unit 3 Reactor Vessel | 10/1/2015 | 5/14/2015 | No | No | | 4 Months Early |
| 135 | Set Unit 3 Steam Generator #2 | 12/22/2015 | 8/6/2015 | No | No | | 4 Months Early |
| 136 | Set Unit 3 Pressurizer Vessel | 5/16/2016 | 12/18/2015 | No | No | | 5 Months Early |
| 137 | Complete Welding of Unit 3 Passive Residual Heat Removal System Piping | 6/20/2016 | 2/1/2016 | No | No | | 5 Months Early |
| 138 | Set Unit 3 Polar Crane | 7/18/2016 | 2/5/2016 | No | No | | 5 Months Early |
| 139 | Start Unit 3 Shield Building Roof Slab Rebar Placement | 1/16/2017 | 8/2/2016 | No | No | | 5 Months Early |
| 140 | Start Unit 3 Auxiliary Building Electrical Cable Pulling | 4/6/2017 | 12/2/2016 | No | No | | 4 Months Early |
| 141 | Activate Unit 3 Auxiliary Building Class 1E DC Power | 6/9/2017 | 12/27/2016 | No | No | | 5 Months Early |
| 142 | Complete Unit 3 Reactor Coolant System Cold Hydro | 1/1/2018 | 5/3/2017 | No | No | | 8 Months Early |
| 143 | Complete Unit 3 Hot Functional Test | 2/15/2018 | 5/17/2018 | No | No | | Delayed 3 Months |

| | | | | |
|-------------|-------------------------------------|----------------------------|--|----------------------------------|
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|----------------------------|-----------------------------------|--|--|---|---|---------------------------------------|---|
| 144 | Complete Unit 3 Nuclear Fuel Load | 7/31/2018 | 7/19/2018 | No | No | | |
| 145 | Begin Unit 3 Full Power Operation | 10/31/2018 | 10/23/2018 | No | No | | |
| 146 | Unit 3 Substantial Completion | 1/1/2019 | 1/1/2019 | No | No | | |

Appendix B

Construction Site Pictures



9/07/10

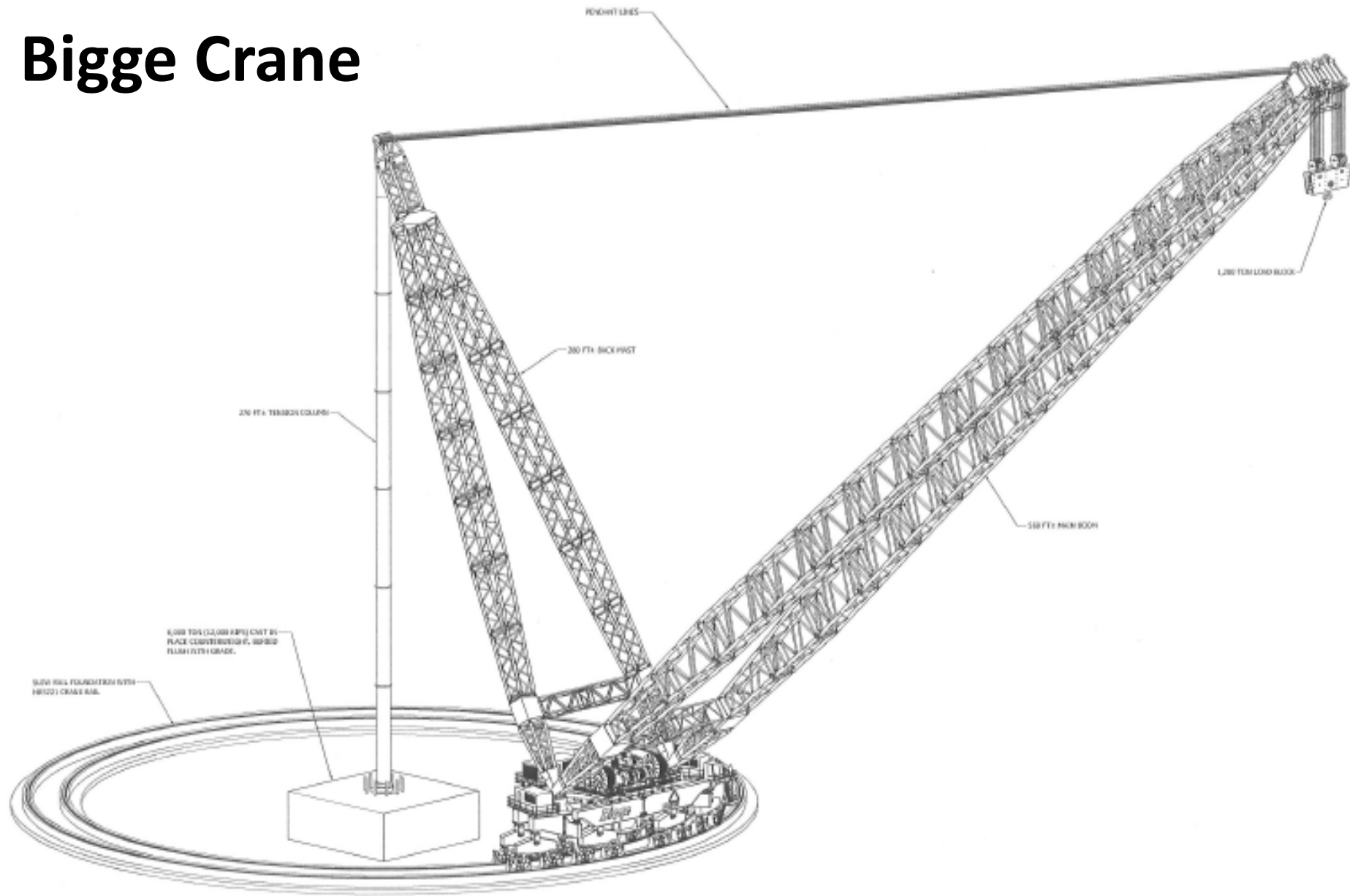
HLD Counterweight Anchor Bolt Cluster

HLD Ring Foundation



9/07/10

Bigge Crane





Batch Plant

9/07/10



Module Assembly Building (MAB)

9/07/10

Switchyard



Appendix C

Regulatory Correspondence

October 28, 2010

Mr. Robert Sisk, Manager
AP1000 Licensing Strategy
Westinghouse Electric Company
1000 Westinghouse Dr, Suite 115
Cranberry Township, PA 1606

SUBJECT: AP1000 PRESSURIZED WATER REACTOR DESIGN AIRCRAFT IMPACT
ASSESSMENT INSPECTION, NRC INSPECTION REPORT NO. 05200006/2010-
203 AND NOTICE OF VIOLATION

Dear Mr. Sisk:

On September 27, 2010, through October 01, 2010, the U.S. Nuclear Regulatory Commission (NRC) conducted an inspection of the Westinghouse Electric Company (WEC) Aircraft Impact Assessment (AIA) pertaining to activities conducted in support of your application, dated May 26, 2005, requesting an amendment to the AP1000 design certification rule. This inspection was performed in the WEC offices located in Cranberry Township, PA. The purpose of the inspection was to perform a limited-scope inspection to assess WEC's compliance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.150, "Aircraft impact assessment." The enclosed report presents the results of this inspection. This inspection report does not constitute NRC's endorsement of your overall AIA.

Based on the results of this inspection, the NRC has determined that a violation of NRC requirements occurred. The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. The violation cites that WEC did not use realistic analyses for certain aspects of its AIA and did not fully identify and incorporate into the design those design features and functional capabilities credited. With the exception of the issues identified in the Notice, the NRC inspection team concluded that the portions of the WEC AP1000 AIA reviewed by the NRC inspection team comply with the applicable requirements of 10 CFR 50.150.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC will use your response to the Notice to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

It is important to note that the NRC inspection team performed a limited review of the AIA. The deficiencies identified may affect other portions of the AIA that the NRC inspection team did not review. Therefore, WEC must extend its review, where applicable, beyond the specific examples identified by the inspection team and apply corrective actions as appropriate. In your response to this violation, WEC should document the areas for which it extended its review beyond the specific examples of the deficiencies identified by the inspection team, the extent of its review, the additional findings, and the corrective actions implemented.

R. Sisk

In accordance with 10 CFR 2.390 of the NRC's "Public inspections, exemptions, requests for withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Document Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response, if applicable, should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

Sincerely,

/RA/

Richard Rasmussen, Chief
Quality and Vendor Branch 2
Division of Construction Inspection
& Operational Programs
Office of New Reactors

Docket No.: 05200006

Enclosure:

1. Notice of Violation
2. Inspection Report No. 05200006/2010-203 and Attachments

R. Sisk

In accordance with 10 CFR 2.390 of the NRC's "Public inspections, exemptions, requests for withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Document Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response, if applicable, should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

Sincerely,

/RA/

Richard Rasmussen, Chief
Quality and Vendor Branch 2
Division of Construction Inspection
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Docket No.: 05200006

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NRO - 001

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| NAME | RPrato | QTE Resources * | BThomas | NGilles | RRasmussen * |
| DATE | 10/20/2010* | 10/26/2010* | 10/28/2010* | 10/ 27/2010* | 10/28/2010* |
| OFFICE | NRO/DNRL/DDLO/NG | AIA FRP Chair | OGC/GCHEA/AGCMLE | | |
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| DATE | 10/ 20 /2010* | 10/28 /2010* | 10/28/2010* | | |

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NOTICE OF VIOLATION

Westinghouse Electric Company
Cranberry Township, PA 16066

Docket Nos.: 05200006
Inspection Report No.: 05200006/2010-203

During a U.S. Nuclear Regulatory Commission (NRC) inspection of the Westinghouse Electric Company (WEC) AP1000 Pressurized Water Reactor design aircraft impact assessment (AIA) conducted at the WEC facility in Cranberry Township, PA, on September 27 through October 1, 2010, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10, of the *Code of Federal Regulations* (CFR), Section 50.150, "Aircraft impact assessment," Paragraph (a)(1) requires that each applicant listed in 10 CFR 50.150(a)(3) shall perform a design-specific assessment of the effects on the facility of the impact of a large, commercial aircraft. Using realistic analyses, the applicant shall identify and incorporate into the design those design features and functional capabilities to show that, with reduced use of operator actions:

- (i) the reactor core remains cooled, or the containment remains intact; and
- (ii) spent fuel cooling or spent fuel pool integrity is maintained.

Contrary to the above, as of October 01, 2010, WEC failed to use realistic analyses in certain portions of its AIA. Specifically, in the AIA the applicant failed to include a second impact scenario that was performed on the Auxiliary Building South wall; failed to adequately perform a fire damage analysis for the spread of fire into the annulus region; failed to provide a technical justification for crediting a water tank and Turbine Building equipment in damage footprint analyses; credited less than a 3-hour rated fire barrier to prevent the propagation of fire into adjacent spaces; failed to adequately assess the vibration effects on the shield plate support structure; and failed to perform an impact analysis for a potential plant vulnerability on the Auxiliary Building. Further, the applicant failed to identify and incorporate into the design the design features and functional capabilities credited in the AIA to show the reactor remains cool, or containment remains intact; and spent fuel cooling or spent fuel pool integrity is maintained as required by 10 CFR 50.150(a)(1). Specifically, the AP1000 AIA credited five walls as 5 psid rated barriers to prevent the spread of fire and the Design Control Document (DCD) only identified two walls as 5 psid rated barriers.

This issue has been identified as Violation 05200006/2010-203-01.

This is a Severity Level IV Violation (Section 6.5).

Pursuant to the provisions of 10 CFR 2.201, "Notice of Violation," WEC is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Chief, Quality and Vendor Branch 1, Division of Construction Inspection and Operational Programs, Office of New Reactors, within 30 days of the date of the letter transmitting this Notice of Violation. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the

Enclosure 1

corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. Where good cause is shown, the NRC will consider extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System, accessible at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or Safeguards Information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

Dated this the 28th day of October 2010

EXECUTIVE SUMMARY

Westinghouse Electric Company
Inspection Report Nos.: 05200006/2010-203

The purpose of this U.S. Nuclear Regulatory Commission (NRC) inspection was to verify that Westinghouse Electric Company (WEC) had implemented the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.150, "Aircraft impact assessment," and performed a design-specific assessment¹ of the effects on the facility of the impact of a large, commercial aircraft. The inspection was conducted at the WEC facility in Cranberry Township, PA during the period September 27 – October 1, 2010.

The following served as the bases for the NRC inspection:

- 10 CFR 50.150

The NRC inspection team implemented Inspection Procedure 37804, "Aircraft Impact Assessment," dated April 27, 2010, during the conduct of this inspection. This AIA inspection was performed to verify that the WEC AP1000 AIA complies with the requirements of 10 CFR 50.150 and to ensure consistency with the industry guidance documented in Nuclear Energy Institute (NEI) 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs," issued May 2009. NEI 07-13 has been endorsed by the NRC in Draft Regulatory Guide 1176 (DG-1176) "Guidance for the Assessment of Beyond-Design-Basis Aircraft Impacts," as one means of performing an AIA acceptable to the NRC. Applicants, who choose to implement an alternate means to analyze any portion of the AIA, must identify the use of an alternate approach to ensure that the NRC inspection team verifies that each applied alternate approach complies with 10 CFR 50.150.

The NRC had not previously inspected the WEC AP1000 aircraft impact assessment (AIA). The list of WEC staff interviewed during this inspection is listed in Attachment 1 to this report. The results of this inspection are summarized below.

With the exception of the violation described below, the NRC inspection team concluded that the portions of the WEC AP1000 AIA reviewed by the NRC inspection team comply with the applicable requirements of 10 CFR 50.150.

Systems-Loss Assessment

The portions of the WEC AP1000 AIA systems-loss assessment reviewed by the NRC inspection team met the requirements of 10 CFR 50.150 and were performed consistent with the guidance provided in DG-1176.

Fire Damage Assessment

With the exception of the contributing deficiencies to Violation 052000060/2010-203-01, the portions of the WEC AP1000 AIA fire damage assessment reviewed by the NRC inspection team

¹ By a "design-specific" assessment, the NRC means that the impact assessment must address the specific design of the facility which is either the subject of a construction permit, operating license, standard design certification, standard design approval, combined license, or manufacturing license application (see 74 FR 28129; June 12, 2009).

met the requirements of 10 CFR 50.150 and were performed consistent with the guidance provided in DG-1176. Specifically, with regards to the AP1000 AIA fire damage assessment, the applicant failed to include a second impact scenario that was performed on the Auxiliary Building South wall; failed to adequately perform a fire damage analysis for the spread of fire into the annulus region; failed to identify and incorporate all the design features into its design; failed to provide a technical justification for crediting a water tank and Turbine Building equipment in damage footprint analyses; and credited less than a 3-hour rated fire barrier to prevent the propagation of fire into adjacent spaces.

Structural Damage Assessment

With the exception of the contributing deficiencies to Violation 052000060/2010-203-01, the portions of the AP1000 AIA structural damage assessment reviewed by the NRC inspection team met the requirements of 10 CFR 50.150 and were performed consistent with the guidance provided in DG-1176. Specifically, with regards to the AP1000 AIA structural damage assessment, the applicant failed to adequately assess the vibration effects on the shield plate support structure. In addition, the applicant failed to perform an impact analysis for a potential plant vulnerability on the Auxiliary Building.

Documentation and Quality Assessment

The portions of the WEC documentation and quality assessment reviewed by the NRC inspection team met the requirements of 10 CFR 50.150 and were performed consistent with the guidance provided in DG-1176.



Westinghouse Electric Company
Nuclear Power Plants
1000 Westinghouse Drive
Cranberry Township, PA 16066
USA

U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, D.C. 20555

Direct tel: 412-374-2035
Direct fax: 724-940-8505
e-mail: ziesinrf@westinghouse.com

Your ref: Docket No. 52-006
Our ref: DCP_NRC_003084

November 12, 2010

SUBJECT: REPLY TO NOTICE OF VIOLATION CITED IN NRC INSPECTION REPORT
NO.: 05200006/2010-203 dated October 28, 2010

Westinghouse acknowledges receipt of the NRC Inspection Report Number 05200006/2010-203 dated October 28, 2010 and the Notice of Violation: 05200006/2010-203-01. Westinghouse takes any notice of violation received from the NRC seriously and is taking appropriate actions to completely resolve these issues in a timely manner, and is committed to be in compliance with the provisions of Title 10, the *Code of Federal Regulations* (CFR), Section 50.150, "Aircraft impact assessment".

Westinghouse also values the results from this thorough review of the aircraft impact assessment (AIA) as it validates our overall implementation of applicable industry guidelines and regulations to ensure the robustness of the AP1000 design. In consideration of NRC comments made both during the inspection and in the exit meeting, Westinghouse immediately initiated corrective actions to resolve the specific issues identified in the Notice of Violation (NOV).

As requested, details of corrective actions associated with each of the issues that contributed to the NOV are described below and demonstrate the use of realistic analyses in the AIA.

Summary of Issues Contributing to the NOV and Immediate Corrective Actions

1. Need to include a second impact scenario that was performed on the Auxiliary Building South wall - The additional Auxiliary Building South wall scenario, including a description of the scenario and corresponding damage maps, was added to Section 5.1.8 in Westinghouse document APP-1000-GEC-002, resulting in Revision 2. This revision was completed prior to the conclusion of the inspection. The inspection team reviewed the revised scenario and found it to be accurate and complete. Corrective Action Status: COMPLETE

2. Need to improve the fire damage analysis for the spread of fire into the annulus region - Analysis has been completed to take credit for the additional 18" of concrete on the inside wall of the shield building, which conservatively exceeds the screening criteria in NEI 07-13. Additionally, a design change has been completed to ensure that the necessary penetrations and doors in the shield building wall contain 5psid seals on the inside of the shield wall. Westinghouse APP-1000-GEC-002 has been revised to require all personnel access penetrations through the shield building wall to meet necessary requirements. With 5psid seals and no damage to the inside of the shield building wall, there is no fire propagation expected. Westinghouse document APP-1000-GEC-002 has been updated.

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to Revision 3 in order to reflect the design changes described and is available for NRC review. Corrective Action Status: COMPLETE

3. Need to provide a technical justification for crediting a water tank and Turbine Building equipment in damage footprint analyses - Since the water tank and Turbine Building were actual obstructions in the scenario, Westinghouse viewed this analysis as realistic. Upon consideration of the NRC inspection results, Westinghouse agrees that the documented technical justification for including the mitigating affects of the intervening water tank and the Turbine Building Equipment was insufficient to support a conclusion in the assessment. During the inspection, Westinghouse re-analyzed the scenario to not take credit for these two obstructions, even though they exist, and demonstrated the acceptability of this revised, more conservative scenario. This revised scenario was included in Revision 2 of Westinghouse document APP-1000-GEC-002 prior to the conclusion of the inspection. The NRC inspection team reviewed the results of this revised scenario and found it acceptable. Corrective Action Status: COMPLETE

4. Correctly credit 3-hour rated fire barriers to prevent the propagation of fire into adjacent spaces - Westinghouse agrees that 1-hour and 2-hour rated fire barriers were inappropriately credited for stopping fire propagation into adjacent spaces. During the inspection, the assessment was revised to credit only 3-hour rated fire barriers for each impact scenario, and the results were documented in Revision 2 of APP-1000-GEC-002 prior to the conclusion of the inspection. The NRC inspection team reviewed the results of this revised scenario and found it acceptable. Corrective Action Status: COMPLETE

5. Need to adequately assess the vibration effects on the shield plate support structure - Westinghouse has incorporated the shield plate and supporting structures into the shield building LS-DYNA model. Both air inlet and cylindrical wall impact analyses were performed with the updated model to determine the nonlinear response to the shield plate. Details of this analysis are documented in Westinghouse APP-1000-S2C-167, R0, and show that the maximum ratio of stress/ultimate tensile strength of the material is in the cross sectional member (92%) and below the elongation maximum of the material (5.6% versus a material allowable of 20%). The analysis demonstrates the Westinghouse design shows adequate margin since these material properties are not exceeded. Westinghouse APP-1000-S2C-167 is available for NRC Review. Corrective Action Status: COMPLETE

6. Need to perform an impact analysis for a potential plant vulnerability on the Auxiliary Building - A design change has been processed to add a steel door to the outer wall of the Annex Building. This door's connections to the Annex Building wall are held to the same acceptance criteria as the wall itself. The analysis of this door was performed to determine the required thickness necessary to be considered equivalent to the wall in which it is located. This analysis was performed using formulas and analysis methods from NEI 07-03 Section 2.1.2.4 and DOE-STD-3014-2006 Section 6.3.2.2. A safety factor of 100% was then added to the calculated values. The design of the three oversized security doors located on the east wall of room 40357, the east wall of room 12351, and the shield building wall on the west side of room 12351 are now designated as key design features for the protection against the physical and fire damage resulting from the impact of a large commercial aircraft. As will be documented in RAI-SRP19F-AIA-01 R3, these key design features will be included in Section 19F.4.2 of the Design Control Document (DCD) that will be submitted for the design certification amendment request. Also, Westinghouse document APP-1000-GEC-002, Revision 3, now reflects the design changes described above and specifies minimum thickness for the other existing doors and their connections to eliminate this potential vulnerability. Westinghouse document APP-1000-GEC-002 is available for NRC review. Corrective Action Status: Design

change is complete and the AIA has been updated. RAI-SRP19F-AIA-01, R3 with DCD mark-ups will be issued prior to November 19, 2010.

7. Need to revise the Design Control Document (DCD) to list all walls credited in the AIA as 5 psid rated barriers to prevent the spread of fire – Westinghouse acknowledges that not all five walls credited in Westinghouse document APP-1000-GEC-002 were identified in the AP1000 DCD. During the inspection, RAI-SRP19F-AIA-09, R1 was issued to identify changes to the DCD to include each of the five walls that were credited as 5psid rated barriers. The inspection team reviewed the revised scenarios and found them to be accurate and complete. As part of the extent of condition review discussed below, Westinghouse identified 4 additional walls that should be included in the analysis. The analysis has been revised accordingly and Westinghouse document APP-1000-GEC-002 has been updated to Revision 3. In addition, the changes will be included in Section 9.5.1.2.1.1 of the DCD to identify these walls consistent with the revised analysis, as documented in RAI-SRP19F-AIA-09 R2. The changes discussed above will be included in the DCD to be submitted for the design certification amendment request. Corrective Action Status: Extent of condition is complete and RAI-SRP19F-AIA-09, R2 with DCD mark-ups will be issued prior to November 19, 2010.

Corrective Steps to Avoid Future Violations

As part of the Westinghouse corrective action process, action was taken immediately to ensure all specific issues were addressed. As discussed above, Westinghouse has completed all analyses, identified necessary design changes, and has updated the AIA as appropriate to resolve each specific issue associated with the NOV. The resolution of the issues will also be included in Revision 18 of the DCD, as described above pending final review and acceptance of the RAI responses that will be provided by November 19, 2010. Further, in support of this response to the NOV, Westinghouse has completed a corrective action investigation that: 1) evaluated activities that supported the development of the AIA; 2) assessed the contributing causes to the issues identified by the inspection; and 3) performed an extent of condition review to determine if the AIA contained any additional issues similar to those identified during the inspection.

Reason for the NOV: The investigation identified several activities that were accomplished prior to the inspection to provide assurance that the guidelines were being implemented appropriately. These activities included an independent peer review that involved the Electric Power Research Institute (EPRI) and a Westinghouse self-assessment that used the NRC inspection procedure IP37804 as the basis for the assessment. These activities were considered appropriate in recognition of the first-of-a kind application of the NEI guidelines and lack of industry experience in interpreting and applying the guidelines. While those activities resulted in improvements to the AIA, the underlying cause that contributed to the limited number of issues identified in the inspection report related to misinterpretation of the guidelines in NEI 07-13 attributed to first-of-a kind application and limited experience interpreting these guidelines consistent with NRC expectations. This led to a small number of engineering assumptions that were challenged during the inspection.

Extent of Condition: The extent of condition review found one additional case related to issue #7 discussed above. Specifically, 4 additional walls that should be included in the DCD and analysis were identified. The analysis has been revised accordingly and documented in Westinghouse APP-1000-GEC-002 R3. In addition, the response to NRC Request for Additional Information (RAI) RAI-SRP19F-AIA-09 R2 will be issued to identify changes to Section 9.5.1.2.1.1 of the DCD to identify these walls consistent with the revised analysis. Overall, Westinghouse concludes that the issues

identified were isolated cases and there are no systemic or process issues requiring further corrective action.

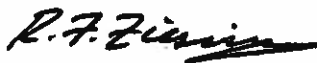
Future Action: Westinghouse considers that all needed corrective actions have been taken to resolve the issues identified by the subject NRC NOV. As a follow-up action beyond the scope of the NOV, Westinghouse will perform an effectiveness review of the corrective actions within 1 year to validate the corrective actions have been effectively implemented.

Conclusion

Westinghouse considers this response as objective evidence to provide sufficient information regarding the corrective actions to satisfactorily resolve the issues identified by the subject NOV. Given the extensive reviews prior to inspection, the inspection itself with resulting corrective actions, and the additional extent of condition review performed, Westinghouse considers the current AIA demonstrates, using realistic analyses, the robustness of the AP1000 design, properly implements NEI 07-13 guidance and complies with 10 CFR 50.150(a)(1).

Any additional questions related to this response should be addressed to R. F. Ziesing, Director, U.S. Licensing, Westinghouse Electric Company LLC, 1000 Westinghouse Drive, Suite 115, Cranberry Township, Pennsylvania 16066.

Very truly yours,



R. F. Ziesing, Director
U.S. Licensing

cc: D. Jaffe - U.S. NRC
E. McKenna - U.S. NRC
J. Peralta - U.S. NRC
R. Prato - U.S. NRC
S. Sanders - U.S. NRC
R. Rasmussen - U.S. NRC
T. Spink - TVA
P. Hastings - Duke Energy
R. Kitchen - Progress Energy
A. Monroe - SCANA
P. Jacobs - Florida Power & Light
C. Pierce - Southern Company
E. Schmiech - Westinghouse
G. Zinke - NuStart/Entergy
R. Grumbir - NuStart
T. Ray - Westinghouse

November 23, 2010

Mr. R. F. Ziesing, Director
U.S. Licensing, Nuclear Power Plants
Westinghouse Electric Company
1000 Westinghouse Drive, Suite 115
Cranberry Township, PA 16066

SUBJECT: WESTINGHOUSE ELECTRIC COMPANY RESPONSE TO U.S. NUCLEAR
REGULATORY COMMISSION (NRC) INSPECTION REPORT [05200006/2010-
203] AND NOTICE OF VIOLATION

Dear Mr. Ziesing:

Thank you for your November 12, 2010, letter in response to the Notice of Violation (NOV) that was discussed in the subject U.S. Nuclear Regulatory Commission (NRC) inspection report (IR).

Based on the information provided in your letter and the discussions held with your staff during conference calls on November 17, 2010, and November 22, 2010, we find your proposed corrective actions responsive to the NOV documented in IR 05200006/2010-203. We have no further questions or comments at this time and may review the implementation of your corrective actions during a future NRC staff inspection to determine that full compliance has been achieved and maintained.

Please contact Mr. Robert Prato at (301) 415-6035 or via electronic mail at: Robert.Prato@nrc.gov, if you have any questions or need assistance regarding this matter.

Sincerely,

/RA/

Richard Rasmussen, Chief
Quality and Vendor Branch 2
Division of Construction Inspection
& Operational Programs

Docket No.: 05200006

Mr. R. F. Ziesing, Director
U.S. Licensing, Nuclear Power Plants
Westinghouse Electric Company
1000 Westinghouse Drive, Suite 115
Cranberry Township, PA 16066

SUBJECT: WESTINGHOUSE ELECTRIC COMPANY RESPONSE TO U.S. NUCLEAR
REGULATORY COMMISSION (NRC) INSPECTION REPORT [05200006/2010-
203] AND NOTICE OF VIOLATION

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Robert.Prato@nrc.gov, if you have any questions or need assistance regarding this matter.

Sincerely,

/RA/

Richard Rasmussen, Chief
Quality and Vendor Branch 2
Division of Construction Inspection
& Operational Programs

Docket No.: 05200006

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*concurrence via email

| OFFICE | NRO/DCIP/CQVA | NRO/DNRL | NRO/DCIP/CQVA/BC |
|--------|---------------|------------|------------------|
| NAME | RPrato* | DMatthews | RRasmussen |
| DATE | 11/ 22/2010 | 11/23/2010 | 11/23/2010 |

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Appendix D

NRC Revised Review Schedule

October 29, 2010

Mr. Ronald B. Clary, Vice President
New Nuclear Deployment
MC P40
South Carolina Electric & Gas Company
PO Box 88
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3 COMBINED LICENSE
APPLICATION – REVISED REVIEW SCHEDULE

Dear Mr. Clary:

By letter dated March 27, 2008 (ML081300460), South Carolina Electric and Gas (SCE&G) submitted its application to the Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advanced passive pressurized water reactors pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Part 52. This letter transmits the Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 COL application revised review schedule. The review supports the issuance of a final safety evaluation report in June 2011 and a Final Environmental Impact Statement (FEIS) in April 2011.

The VCSNS COL application review schedule has been previously communicated to you in several letters. This letter updates and replaces the review schedule discussed in the following letters:

- The safety review schedule provided to you by letter dated September 26, 2008 (Agencywide Documents Access and Management System (ADAMS) accession number ML082590543). The safety review milestones have been revised from this letter for reasons stated below.

Potential changes to the safety review schedule based on impacts associated with the emergency planning review that were discussed in a letter dated April 13, 2010 (ADAMS accession number ML100880135). The safety review milestones have been updated to reflect the emergency planning review schedule. In the letter dated April 13, 2010, the staff informed you that it would change the schedule based on a delay in your response to Federal Emergency Management Agency's (FEMA) request for additional information (RAI) regarding your offsite emergency plan. Previously the staff had established a deadline of March 15, 2010, for you to provide this response. You subsequently provided the response to the FEMA RAI in a letter dated June 24, 2010.

- The environmental review schedule that was discussed in a letter to you dated February 23, 2010 (ADAMS accession number ML100541130).

R. Clary

Safety Review Schedule

The VCSNS Units 2 and 3 COL application incorporates by reference both Appendix D to 10 CFR 52 and the AP1000 Design Control Document amendment submitted by Westinghouse as Revision 17. Thus, a substantial portion of the VCSNS Units 2 and 3 COL review schedule is dependent on the review schedule for the AP1000 Design Certification Amendment (DCA). In a letter dated June 21, 2010 (ML101680069), the NRC issued a revision to the review schedule for the AP1000 DCA. The VCSNS Units 2 and 3 COL safety review schedule has been rebaselined to be consistent with the AP1000 DCA schedule provided in the June 21, 2010, letter. The revised VCSNS Units 2 and 3 COL safety review schedule is provided in Table 1 of this letter. The revised schedule does not include any management reserve (margin) and remains dependent on the AP1000 DCA review schedule. The revised schedule also reflects the staff's schedule for the emergency planning review based on your FEMA RAI response dated June 24, 2010. The staff will inform you of further modifications to the safety review schedule if they are needed because of issues identified during the review of the AP1000 DCA or because of the review of the VCSNS Units 2 and 3 COL application.

Environmental Review Schedule

In the February 23, 2010, environmental review schedule letter, the staff indicated that the date for issuance of the VCSNS Draft Environmental Impact Statement (DEIS) would be April 2010. The staff issued the DEIS consistent with this schedule. The staff stated in the February 23, 2010, letter that it would review and re-baseline, if necessary, the environmental review schedule soon after the public comment period for the DEIS ended. The DEIS comment period ended on July 9, 2010. Certain issues that were raised during the comment period, including clarification of transmission line routes and the associated environmental impacts, are expected to require additional time to address. In order to resolve these and other technical issues, the date for issuing the Final Environmental Impact Statement (FEIS) is being revised from February 2011 to April 2011. The revised date is reflected in Table 1 of this letter. SCE&G recently provided additional information on refined transmission line routes that should be useful in addressing the associated comments in the FEIS. Once this information is fully reviewed by the NRC staff, the staff will determine whether further modifications to the environmental review schedule are needed.

R. Clary

Should you have any questions regarding the safety review schedule, please contact Joe Sebrosky at (301) 415-1132 or e-mail at joseph.sebrosky@nrc.gov. Should you have any questions regarding the environmental review schedule, please contact Pat Vokoun at (301) 415-3470 or e-mail at patricia.vokoun@nrc.gov.

Sincerely,

/RA/

David Matthews, Director
Division of New Reactor Licensing
Office of New Reactors

Docket Nos.: 52-027 and 52-028

Enclosure:

Table 1 Revised Safety Review Schedule for VCSNS Units 2 and 3 Combined License Application

cc: See next page

R. Clary

Should you have any questions regarding the safety review schedule, please contact Joe Sebrosky at (301) 415-1132 or e-mail at joseph.sebrosky@nrc.gov. Should you have any questions regarding the environmental review schedule, please contact Pat Vokoun at (301) 415-3470 or e-mail at patricia.vokoun@nrc.gov.

Sincerely,

/RA/

David Matthews, Director
Division of New Reactor Licensing
Office of New Reactors

Docket Nos.: 52-027 and 52-028

Enclosure:

Table 1 Revised Safety Review Schedule for VCSNS Units 2 and 3 Combined License Application

cc: See next page

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*see previous concurrence

| OFFICE | LA:DNRL/NWE1 | PM:DNRL/NWE1 | BC:DSER/RAP2 | BC:NSIR/NRLB |
|--------|--------------|--------------|--------------|-----------------------------|
| NAME | KGGoldstein | JSebrosky* | RWhited* | KWilliams* |
| DATE | 08/19/2010 | 10/25/10 | 10/25/10 | 08/19/2010 |
| OFFICE | OGC | BC:DNRL/NWE1 | DD:DSER | DD: DNRL |
| NAME | SKirkwood* | JCruz | NChokshi* | DMatthews F.Akstulewicz for |
| DATE | 08/23/2010 | 10/25/2010 | 10/25/2010 | 10/29/2010 |

OFFICIAL RECORD COPY

Table 1: Revised Safety and Environmental Review Schedule for the Virgil C. Summer Units 2 and 3 Combined License Application

| <u>Phase of Safety Review</u> | <u>Target Completion Date</u> |
|--|--------------------------------------|
| Phase A Requests for Additional Information (RAIs) and Supplemental RAIs | Completed – September 2009 |
| Phase B Advanced Safety Evaluation Report (SER) with no Open Items (OIs) | January 2011 |
| Phase C ACRS review of Advanced SER with no OIs | May 2011 |
| Phase D Final SER Issued | June 2011 |
| <u>Phase of Environmental Review</u> | <u>Target Completion Date</u> |
| Phase 1 Environmental Impact Statement scoping report issued | Completed – July 2009 |
| Phase 2 Draft Environmental Impact Statement (DEIS) | Completed – April 2010 |
| Phase 3 Response to public comments on DEIS completed | Completed – August 2010 |
| Phase 4 Final Environmental Impact Statement | April 2011 |

ENCLOSURE

Appendix E

ACRS Report to the NRC



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

December 13, 2010

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**SUBJECT: REPORT ON THE FINAL SAFETY EVALUATION REPORT ASSOCIATED
 WITH THE AMENDMENT TO THE AP1000 DESIGN CONTROL DOCUMENT**

Dear Chairman Jaczko:

During the 578th meeting of the Advisory Committee on Reactor Safeguards (ACRS), December 2-4, 2010, we reviewed the NRC staff's Advanced Final Safety Evaluation Report (AFSER) for the pending AP1000 Design Certification Amendment (DCA) application. The amendment is to be reflected in a revision to the AP1000 Design Control Document (DCD). The amendment involves changes to Tier 1 information, and its approval will require rulemaking. We had a number of subcommittee and full committee meetings to review the technical aspects of the amendment. During these meetings, we had the benefit of discussions with representatives of the NRC staff, Westinghouse Electric Company (WEC), and members of the public. We also had the benefit of the documents referenced.

CONCLUSION AND RECOMMENDATION

The changes proposed in the AP1000 DCA maintain the robustness of the previously certified design. We conclude that there is reasonable assurance that the revised design can be built and operated without undue risk to the health and safety of the public. This conclusion is contingent on the results of our concurrent reviews of the aircraft impact assessment and long-term core cooling issues which will be discussed in separate letters.

This conclusion relies in part on information and commitments provided by WEC during the course of our meetings which have not yet been confirmed to be included in the DCA application. This information and commitments are noted in the discussion following, and the staff should ensure they are appropriately documented as part of the DCA.

BACKGROUND

For its initial design approval and certification of the AP1000 design, the NRC issued NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Design," in September 2004 and published the proposed design certification rule on April 18, 2005. In December 2005, the NRC staff evaluated the conforming Revision 15 to the AP1000 DCD in Supplement 1 to NUREG-1793. The NRC published a final rule certifying the AP1000 standard plant design on January 27, 2006.

Thus, the existing AP1000 certification rule is reflected in DCD Revision 15. Revision 18 was submitted by WEC in a letter dated December 1, 2010, and it includes changes identified in Revision 16, submitted May 26, 2007, and in Revision 17, submitted September 22, 2008, as well as those changes made subsequent to submittal of Revision 17 which are identified in the AFSER, Chapter 23.

In addition, WEC submitted letters to supplement its DCA application dated October 26, November 2, and December 12, 2007, as well as January 11, and 14, 2008. Finally, NuStart Energy Development, LLC and WEC submitted a number of technical reports (TRs) for review. TRs typically address a topical area, such as the design of a component, structure, or process, in support of the AP1000 design.

The DCA application proposes to incorporate changes in the AP1000 certification rule reflecting the following:

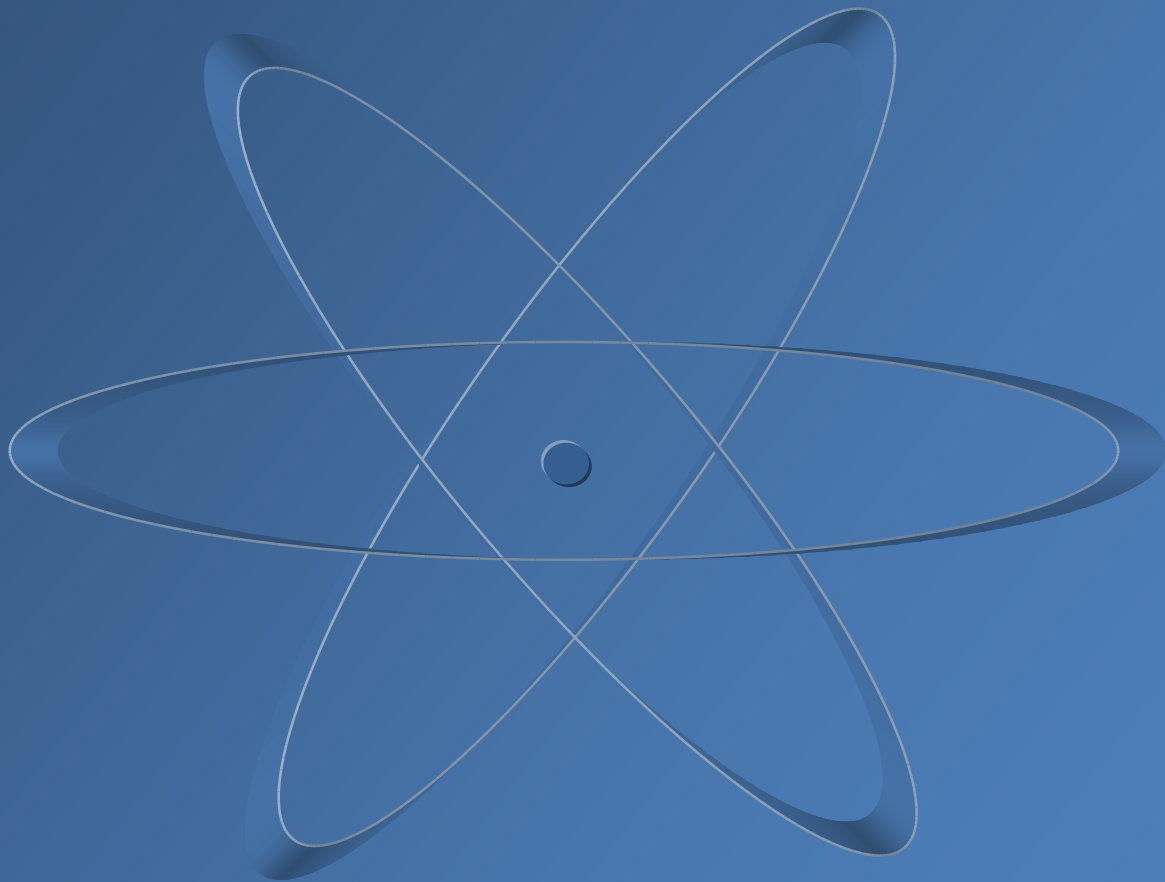
- Design standardization, which was enhanced by elimination of numerous combined license (COL) open items currently in the existing rule.
- New regulatory requirements, including requirements related to aircraft impact. (As previously noted, review of compliance with the aircraft impact requirements will be discussed in a separate letter).
- Design finalization, which was required to produce construction drawings and procurement specifications. This includes reduced reliance on design acceptance criteria (DAC).

Significant changes proposed in the DCA application include the following:

- Redesign of the shield building to use a modular, steel concrete composite (SC) structure, replacing the existing reinforced concrete (RC) design. The redesign reduces passive heat removal air flow and affects seismic, aircraft impact, and other loading analyses.
- Redesign of the Reactor Vessel Support System to increase stiffness.
- Increase in the range of foundation soil conditions considered.
- Closure of four digital instrumentation and control (DI&C) DAC, with only one remaining open. Numerous I&C changes were made to reflect design evolution, such as addition of a reactor trip function, implementation of a rod withdrawal prohibit, and modification of the containment isolation logic for the Component Cooling System.
- Closure of four human factors engineering (HFE) DAC, with none remaining open.
- Modification of the reactor coolant pump (RCP) design, including an increase in its rotational inertia.
- Addition of a flow skirt at the inlet to the reactor vessel lower plenum.
- Redesign of the Steam and Power Conversion Systems.

Our review of the DCA application began with a status review by the Full Committee during the 562nd meeting in May 2009. Subsequently, our AP1000 subcommittee held 12 meetings, totaling 21 days of meetings, as listed in the appendix to this letter.

South Carolina Office of Regulatory Staff
Review of South Carolina Electric & Gas Company's
2010 4th Quarter Report on
V. C. Summer Units 2 and 3
Status of Construction



April 21, 2011



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Appendices

Appendix A: *Santee Cooper Press Release*

Appendix B: *Detailed Milestone Schedule as of December 31, 2010*

Appendix C: *Construction Site Pictures*

Appendix D: *ACRS Correspondence*

Appendix E: *Shaw Modular Solutions Correspondence*

Appendix F: *NRC Press Release*

Introduction

On March 2, 2009, the Public Service Commission of South Carolina (“Commission”) approved South Carolina Electric & Gas Company’s (“SCE&G” or the “Company”) request for the construction of V.C. Summer Nuclear Station Units 2 and 3 (the “Units”) and the Engineering, Procurement and Construction (“EPC”) Contract. This approval can be found in the Base Load Review Order No. 2009-104(A) filed in Docket 2008-196-E. Subsequently, on January 22, 2010, the Commission approved updated capital cost estimates and construction schedules in Order No. 2010-12, which is filed in Docket 2009-293-E.

SCE&G and the South Carolina Public Service Authority (“Santee Cooper”) are co-owners of the project at 55% and 45%, respectively. The South Carolina Office of Regulatory Staff (“ORS”) has no regulatory oversight of Santee Cooper. The two companies continue to operate jointly to construct the Units under the terms established in their Bridge Agreement. Negotiations continue between the two utilities to establish the terms of a final joint ownership contract. As previously reported in ORS reviews, SCE&G has disclosed that Santee Cooper is reviewing its level of participation in constructing the Units. On March 21, 2011, Santee Cooper issued a press release announcing it signed a letter of intent to negotiate a power purchase agreement with the Orlando Utilities Commission (“OUC”). This press release, which is attached as Appendix A, states that Santee Cooper is negotiating the sale of 5 to 10 percent of the capacity and output from Santee Cooper’s ownership interest in the two new units. Based on this press release, the letter of intent also includes as part of the potential transaction an option for OUC’s future acquisition of a portion of Santee Cooper’s ownership interest.

On February 14, 2011, SCE&G submitted its 2010 4th Quarter Report (“Report”) related to its construction of the Units. The Report is filed in Commission Docket No. 2008-196-E and covers the quarter ending December 31, 2010. The Company submitted its Report pursuant to S.C. Code Ann. § 58-33-277 (Supp. 2009) of the Base Load Review Act (“BLRA”), which requires the Report to include the following information:

1. Progress of construction of the plant;
2. Updated construction schedules;
3. Schedules of the capital costs incurred including updates to the information required by Section 58-33-270(B)(5);
4. Updated schedules of the anticipated capital costs; and
5. Other information as the Office of Regulatory Staff may require.

With reference to Section 58-33-275(A) of the BLRA, ORS’s review of the Company’s Report focuses on SCE&G’s ability to adhere to (1) the approved construction schedule and (2) the approved capital cost estimates.

Approved Schedule Review

Milestone Schedule

As of December 31, 2010, ORS verified that of the Milestone Schedule's 146 activities:

- 58 milestone activities are complete (includes 57 historical and 1 future milestones)
- 88 milestone activities remain to be completed (includes 4 delayed historical and 84 future milestones)

ORS also verified that during the 4th quarter of 2010:

- Six (6) milestone activities were scheduled to be completed
 - Three (3) of these milestones were completed
 - Three (3) of these milestones remain to be completed
- One (1) historical milestone was completed

As of the end of the 4th quarter of 2010, ORS verified that:

- None (0) of the milestones fall outside the deviation standards of being accelerated up to 24 months or being delayed up to 18 months.

In ORS's 3rd quarter 2010 review, there were two (2) Caution Milestones identified. Caution Milestones are those that have been delayed ten (10) months or greater. Below is the current status of these milestones:

- **Milestone Activity No. 55** – *Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion – Unit 2.*
Status: Completed.

This activity was scheduled to be completed on February 28, 2010. It was completed on December 30, 2010. This milestone was delayed to correct a distortion in the upper shell and has been impacted by work scheduling conflicts.

- **Milestone Activity No. 80** – *Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2.*
Status: Delayed 9 months.

This activity is scheduled to be completed on January 31, 2011. The revised target completion date is October 31, 2011. Mangiarotti, located in Italy, is the manufacturer for the heat exchanger and associated tubing.

The Company reports to ORS that a manufacturing hold was placed on Mangiarotti. This hold caused the delay and has since been lifted. The Company does not anticipate the delay to impact the receipt of this major component at the site.

ORS has not identified any Caution Milestones during its 4th quarter review. Appendix B shows details of the Milestone Schedule as of December 31, 2010.

SCE&G's Milestone Schedule attached to the Report indicates that overall construction is on schedule. ORS's review of the current Milestone Schedule does not identify any impact to Unit 2 and Unit 3's substantial completion dates of April 1, 2016 and January 1, 2019, respectively.

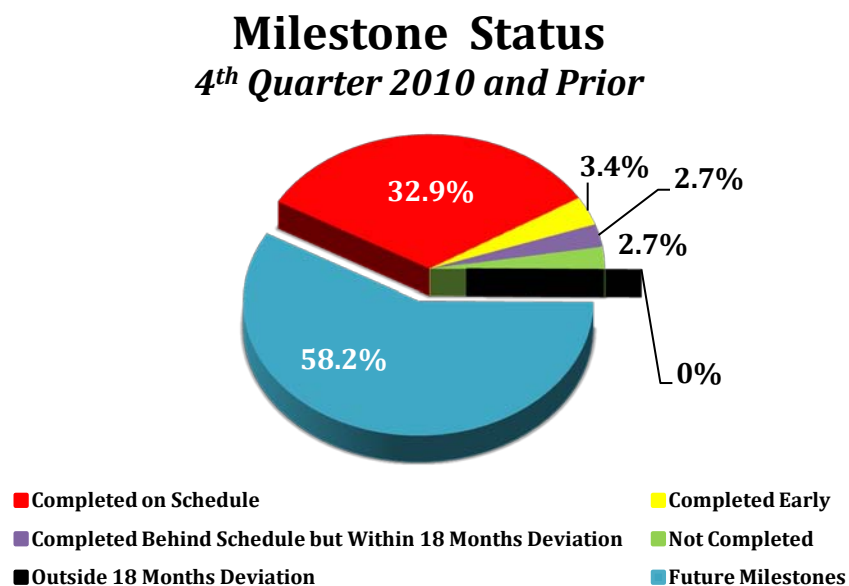
ORS reviewed four (4) invoices associated with milestones that were paid during the 4th quarter and found the invoice amounts to be consistent with the EPC payment schedules.

Table 1 shows the status of the 61 historical milestones and Chart 1 shows the status of all 146 milestones for the 4th quarter of 2010 and prior.¹

Table1:

| Historical Milestones <i>4th Quarter 2010 and Prior</i> 61 of 146 Total Milestones | | |
|---|-----------------|----------------------------------|
| | # of Milestones | % of All Milestones ² |
| Completed on Schedule | 48 | 32.9% |
| Completed Early | 5 | 3.4% |
| Completed Behind Schedule but Within 18 Months Deviation | 4 | 2.7% |
| Not Completed | 4 | 2.7% |
| Outside 18 Months Deviation | 0 | 0% |
| Total Historical Milestones | 61 | 41.8% |

Chart 1:



¹ The numbers reported by ORS and SCE&G will vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed July 2, 2010 and the actual completion date is June 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being done on schedule since it was completed within 30 days of the scheduled completion date.

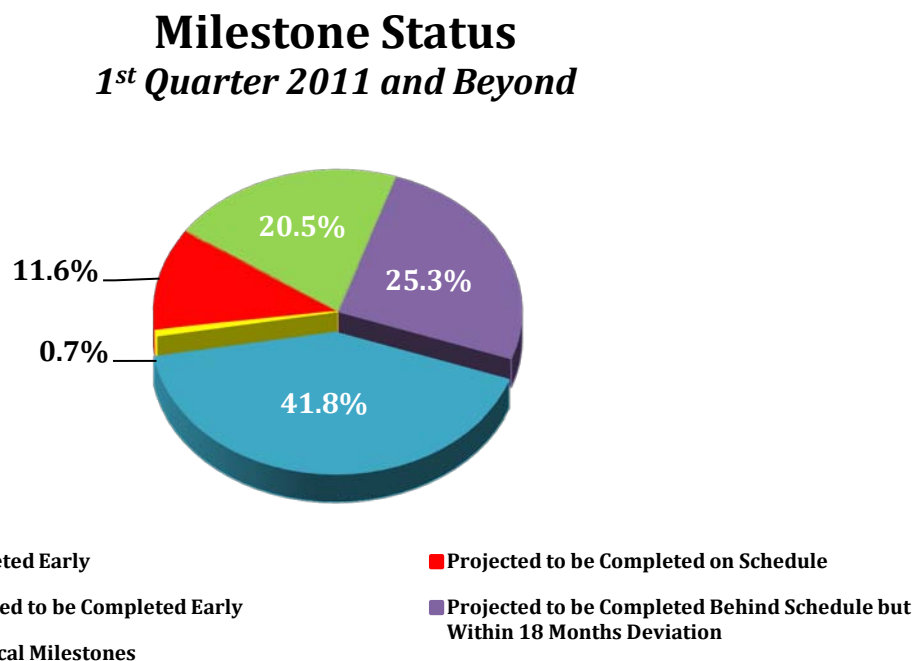
² There will be slight variances in these numbers due to rounding.

Table 2 shows the status of the 85 future milestones and Chart 2 shows the status of all 146 milestones for the 4th quarter 2010 and beyond.³

Table 2:

| Future Milestones <i>1st Quarter 2011 and Beyond</i> 85 of 146 Total Milestones | | |
|--|------------------------|--|
| | # of Milestones | % of All Milestones⁴ |
| Completed Early | 1 | 0.7% |
| Projected to be Completed on Schedule | 17 | 11.6% |
| Projected to be Completed Early | 30 | 20.5% |
| Projected to be Completed Behind Schedule but Within 18 Months Deviation | 37 | 25.3% |
| Total Future Milestones | 85 | 58.2% |

Chart 2:



³ The numbers reported by ORS and SCE&G will vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed July 2, 2010 and the actual completion date is June 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being done on schedule since it was completed within 30 days of the scheduled completion date.

⁴ There will be slight variances in these numbers due to rounding.

Specific Construction Activities

The overall site construction activities are progressing well. The construction workforce consists of approximately 900 contract personnel and 140 SCE&G personnel. Some of the major construction activities during the 4th quarter of 2010 are listed below:

- Excavation of the Nuclear Island for Unit 2, which provides the foundation for the reactor, continued. This is the first critical path activity. ORS closely monitors all critical path activities.
- Testing of safety-related concrete mixes continues. Concrete is being produced on-site at the first batch plant for the Heavy Lift Derrick ("Bigge Crane") foundation, switchyard foundations and pads, and electrical duct banks.
- Preparation for the Bigge Crane continues. The second of three levels of concrete was placed into the counterweight. A stone lay down area for the boom assembly was also installed.
- The second on-site batch plant arrived at the site with assembly scheduled for the first quarter of 2011.
- The Yard Fire Service tank was completed.
- The three concrete pads on which the Containment Vessels will be fabricated were completed.
- A 330 ton crane and a 150 ton crane were assembled near the concrete pads to support receipt of Containment Vessel Bottom Head ("CVBH") material.
- All of the CVBH material has been received and stored on site. The shipment and receipt of the Bottom Head material is a critical path activity. ORS closely monitors all critical path activities.
- The renovation of the Nuclear Learning Center was completed.
- Installation of the Storm Drain System piping around the Tabletop continues.
- Earthwork on the table top area – where the AP1000 units will be located – was nearing completion.
- The Module Assembly Building installation of permanent electrical power continues with scheduled completion in the first quarter of 2011.

Photographs of 4th quarter construction activities are shown in Appendix C.

Change Orders

During the 4th quarter of 2010, Change Order No. 8 was still under development. Change Order Nos. 9 and 10 were approved by the Company. Change Order No. 11 was executed subsequent to the 4th quarter of 2010.

Change Order No. 8 – On August 10, 2010, SCE&G entered into an agreement with the consortium consisting of Westinghouse Electric Company (“WEC”) and Shaw. This agreement permits certain specific items of the EPC Contract that were originally included in the Target Price cost category to be moved to the Fixed Price or Firm Price cost categories.

Change Order. No. 9 – This Change Order was executed on November 30, 2010 to reconfigure certain outgoing transmission lines within the Unit 2 Switchyard.

Change Order No. 10 – Approved on December 16, 2010, this Change Order provides licenses and software to allow SCE&G direct digital access to WEC’s Primavera “live” integrated project schedule without incurring periodic software update costs.

Change Order No. 11 – This Change Order was executed on February 28, 2011. WEC and Shaw will perform a study to evaluate the construction schedule impact of a probable delay in the receipt of the Combined License (“COL”) from the Nuclear Regulatory Commission (“NRC”). This Change Order and COL Delay Study (“Study”) are described in more detail in the Section “Notable Activities Occurring After December 31, 2010.”

Table 3 details the Change Orders and Amendments.

Table 3:

| Change Orders and Amendments | | | | | |
|------------------------------|---|--|------------------------|---------------|-------------------|
| No. | Summary | Cost Categories Involved | Type of Change | Date Approved | Status |
| 1 | Operator training for WEC Reactor Vessel Systems and Simulator training | Fixed Price with 0% escalation ⁵ | Owner Directed | 7/22/2009 | Approved |
| 2 | Limited Scope Simulator | Firm | Owner Directed | 9/11/2009 | Approved |
| 3 | Repair of Parr Road | Time and Materials | Owner Directed | 1/21/2010 | Approved |
| 4 | Transfer of Erection of CA20 Module from WEC to Shaw | Target Price work shifting to Firm Price | Contractor Convenience | N/A | Superseded by #8 |
| 5 | <i>*Addition to Change Order #1*</i> Increased training by two weeks | Fixed Price with 0% escalation | Owner Directed | 5/4/2010 | Approved |
| 6 | Hydraulic Nuts | Fixed Price | Owner Directed | 7/13/2010 | Approved |
| 7 | St. George Lines 1 & 2 | Firm and Target Price | Entitlement | 7/13/2010 | Approved |
| 8 | Target to Firm/Fixed Shift | Target, Firm and Fixed Price Categories | Owner Directed | Pending | Under Development |
| 9 | Switchyard Lines Reconfiguration | Target and Firm Price Categories | Owner Directed | 11/30/10 | Approved |
| 10 | Primavera | Fixed Price with 0% escalation | Owner Directed | 12/16/10 | Approved |
| 11 | COL Delay Study ⁶ | Fixed Price, but would be applied to T&M Work Allowances | Owner Directed | 2/28/11 | Approved |

| | | |
|---------------------|--|----------------------|
| Amendment #1 | Includes Change Orders 1 and 2 | Executed on 8/2/2010 |
| Amendment #2 | Will incorporate Change Orders 3, 5-11 | Under Development |

⁵ Fixed Price with 0% escalation, but applied to Time and Materials Work Allowances by adding a new category for Simulator Instructor training and reducing Startup Support by commensurate amount.

⁶ This Change Order was approved in the 1st Quarter 2011.

Federal Licensing Activities

The NRC issued a Revised Review Schedule to SCE&G on October 29, 2010. The revised NRC schedule supports issuance of the final safety evaluation report in June 2011 and the final environmental impact statement in April 2011.

On December 13, 2010, the NRC Advisory Committee on Reactor Safeguards (“ACRS”) reported to the NRC stating: “we conclude that there is reasonable assurance that the revised design can be built and operated without undue risk to the health and safety of the public.” This conclusion was contingent upon the results of the ACRS’ review of the aircraft impact assessment. The ACRS provides reputable – but nonbinding – input to the NRC. The NRC will consider the ACRS findings before deciding whether to approve the rulemaking for the revised AP1000 design. The ACRS report is attached as Appendix D.

On January 19, 2011, the ACRS supplemented its December 13, 2010 findings and issued a report on the safety aspects of the Aircraft Impact assessment of the AP1000. Additionally, on February 24, 2011, the NRC issued a Notice of Proposed Rulemaking (“NOPR”) to amend its regulations to certify an amendment to the AP1000 standard plant design. This report and NOPR are described in more detail in the Section “Notable Activities Occurring After December 31, 2010.”

On April 19, 2011 the NRC and U.S. Army Corps of Engineers (“USACE”) issued the Final Environmental Impact Statement (“FEIS”) for the Units stating that there are no environmental impacts that would prevent issuing the COL for construction and operation of the Units. The FEIS is described in more detail in the Section “Notable Activities Occurring After December 31, 2010.”

Based on ORS’s monitoring of the federal licensing activities, Table 4 below provides the most current dates for the review of SCE&G’s COL.

Table 4:

| Review Schedule for SCE&G's Combined License Application | | |
|---|--|--------------------------------|
| Key Milestone | | Completion Date |
| Application | | |
| Application Submitted | | Completed – 3/27/2008 |
| Safety Review | | |
| Phase A | Requests for Additional Information (“RAIs”) and Supplemental RAIs | Completed – 9/10/2009 |
| Phase B | Advanced Final Safety Evaluation Report (“SER”) without Open Items | Completed – 12/10/2010 |
| Phase C | ACRS Review of Advanced Final SER | Completed – 3/26/2011 |
| Phase D | Final SER Issued | Target – June 2011 |
| Environmental Review | | |
| Phase 1 | Environmental Impact Statement scoping report issued | Completed – 07/15/2009 |
| Phase 2 | Draft Environmental Impact Statement (“DEIS”) | Completed – 04/16/2010 |
| Phase 3 | Response to Public Comments on DEIS | Completed – August 2010 |
| Phase 4 | Final Environmental Impact Statement | Completed – 4/19/11 |
| Hearing | | |
| NRC holds Mandatory hearing | | Target – August 2011 |
| License | | |
| NRC Rulemaking Decision | | Target – September 2011 |
| NRC Issuance of Combined License | | Target – December 2011 |

Approved Budget Review

As reported in ORS's 3rd Quarter Review, the South Carolina Supreme Court ruled on August 9, 2010 that SCE&G may not recover "contingency costs" under the BLRA. S.C. Energy Users Comm. vs. South Carolina Pub. Serv. Comm'n, 388 S.C. 486, 697 S.E.2d 587 (2010). Previously, contingency costs had been approved as a capital cost category by the Commission in Order No. 2009-104(A), as modified by Order No. 2010-12. The Supreme Court's ruling removes all contingency costs totaling \$438.293 million from the budget for the Units, thereby reducing the overall approved budget. That is, the total approved SCE&G project commitment (in 2007 dollars) is reduced from \$4.534 billion to \$4.096 billion.

As a result of the August 9, 2010 Supreme Court Ruling, on November 15, 2010, the Company filed, concurrently with its Report, a request with the Commission in Docket No. 2010-376-E (the "Filing") to include approximately \$174 million in capital costs which would have been deducted from the Company's \$438.293 million (in 2007 dollars) budget for contingency costs. The Filing updates the gross construction cost – which includes escalation and Allowance for Funds Used During Construction ("AFUDC") – of the project to show a decrease from \$6.188 billion⁷ to \$5.787 billion, which is an overall reduction of approximately \$400 million in the total cost to construct the Units. SCE&G's Report reflects the removal of the \$438.293 million (in 2007 dollars) in contingency dollars, the request to include approximately \$174 million (in 2007 dollars) in capital costs and the corresponding updated gross construction cost of the project.

ORS reviewed the Company's Filing for revised capital costs and during the April 4, 2011 hearing on the Filing, ORS witness Mark Crisp stated in his direct testimony that, "based on our review of the Company's filing, the supporting documentation, in-depth review of each modification, and discussions with SCE&G, we recommend granting the Company's request." This testimony is consistent with the Settlement Agreement ORS reached with SCE&G prior to the hearing. A Commission Order on this Filing is pending.

ORS's budget review includes an analysis of the 4th quarter 2010 cost estimates, project cash flow, escalation and AFUDC.

⁷ \$6.188 billion reflects the removal of the contingency dollars. The gross construction cost per Commission Order No. 2010-12 is \$6.875 billion.

Cost Estimates

To determine how closely the Company adheres to the budget approved by the Commission in Order No. 2010-12, ORS evaluates nine (9) major cost categories for variances. These cost categories are:

- Fixed with No Adjustment
- Firm with Fixed Adjustment A
- Firm with Fixed Adjustment B
- Firm with Indexed Adjustment
- Actual Craft Wages
- Non-Labor Cost
- Time & Materials
- Owners Costs
- Transmission Projects

ORS found multiple variances which were due to various project changes (e.g., shifts in work scopes, payment timetables, construction schedule adjustments, change orders). As of the end of the 4th quarter of 2010, the cumulative impact of these changes increases the total base project cost⁸ (in 2007 dollars) from the approved \$4.096 billion to \$4.270 billion, which is an increase of approximately \$174 million – the amount SCE&G seeks to include in its Filing.

Project Cash Flow

In its Report, the Company also compares its current project cash flow to the cash flow schedule approved by the Commission in Order 2010-12. To produce a common basis for the comparison, SCE&G adjusts the approved cash flow schedule to reflect the current escalation rates. As of December 31, 2010, the comparison shows the yearly maximum annual variance above and below the approved cash flow schedule through the life of the project. The comparison also shows the cumulative project cash flow is forecasted to be roughly \$28.639 million under budget at the end of 2010. Also, at the end of the project in 2018, the cumulative project cash flow is forecasted to be approximately \$185 million over budget.

Table 5 shows the annual and cumulative project cash flows as compared to those approved in Order No. 2010-12.

⁸ Base project cost does not include contingency dollars.

Table 5:

| Project Cash Flow Comparison | | | |
|---------------------------------------|-------------|------------------------|----------------------------|
| <i>\$'s in Thousands ⁹</i> | | | |
| | | Annual Over/(Under) | Cumulative Over/(Under) |
| Actual | 2007 | - | - |
| | 2008 | \$0 | \$0 |
| | 2009 | (\$4,282) | (\$4,282) |
| | 2010 | (\$24,357) | (\$28,639) |
| Projected | 2011 | (\$13,909) | (\$42,548) |
| | 2012 | \$93,929 | \$51,381 |
| | 2013 | \$61,231 | \$112,613 |
| | 2014 | (\$14,346) | \$98,267 |
| | 2015 | \$30,280 | \$128,547 |
| | 2016 | \$29,623 | \$158,170 |
| | 2017 | \$4,519 | \$162,689 |
| | 2018 | \$22,448 | \$185,137 |

In summary, the Report shows an increase in the total base project cost of approximately \$174 million (in 2007 dollars) resulting in an additional project cash flow requirement of approximately \$185 million necessary to complete the project in 2018. The Company seeks to reconcile the base project cost requirements and the project cash flow deficiency in its Filing.

⁹ There will be slight variances in these numbers due to rounding.

AFUDC and Escalation

The forecasted AFUDC for the project through the 4th quarter of 2010 is \$255.684 million and is based on a forecasted 5.87% AFUDC rate. This is a decrease of approximately \$47.091 million from the Company's 2010 3rd Quarter Report.

As reported by ORS in its review of SCE&G's 2010 3rd Quarter Report, the decline in the five-year average escalation rates reduce the projected project cash flow. Current worldwide economic conditions continue to reduce the projected cost escalation of the project. Primarily due to the decrease in escalation rates, the overall project is considered under budget. More specifically, as of December 31, 2010, the forecast of gross construction cost of the plant is \$5.787 billion as compared to the approved gross construction cost of \$6.188 billion which reflects an approximate \$400 million overall reduction in the cost of the project.

Additional ORS Monitoring Activities

ORS continually performs the following activities as well as other monitoring activities as deemed necessary.

- Audits capital cost expenditures and resulting AFUDC in Construction Work in Progress
- Physically observes construction activities
- Performs bi-monthly on-site review of construction documents
- Holds monthly update meetings with SCE&G
- Meets quarterly with representatives of WEC
- Attends NRC Public Meetings regarding SCE&G Combined License Application
- Participates in ACRS conference calls

Notable Activities Occurring after December 31, 2010

The BLRA allows SCE&G 45 days from the end of the current quarter to file its Report. Items of importance that occurred subsequent to the closing of the 4th quarter are reported below.

Change Order No. 8

As mentioned in previous ORS reviews of the Company's Quarterly Reports, SCE&G has negotiated with Shaw to use a single, large Bigge Crane as opposed to two smaller cranes contemplated in the EPC Contract. SCE&G reports to ORS that Change Order No. 8 satisfies the Company's concerns regarding the use of a single large crane. During the April 4, 2011 hearing, Company witness Carlette Walker stated in her direct testimony that, "SCE&G's customers benefit because the project will have the use of the HLD at the current price of the two smaller Lampson cranes."

The dollars associated with Change Order No. 8 are included in the Company's Filing. ORS determined these costs to be reasonable and recommended the Commission approve the Company's request.

Change Order No. 11

SCE&G executed this Change Order and agreed for WEC and Shaw to perform a study to evaluate the construction schedule impact of a probable delay in the receipt of the COL from the NRC. The Study will consider two alternative construction plans.

Scenario 1 would maintain the Unit 2 Substantial Completion Date of April 1, 2016. Scenario 2 would delay the Substantial Completion Date for Unit 2 from April 1, 2016 to October 1, 2016. Under both scenarios the Substantial Completion date of Unit 3 would remain as scheduled for January 1, 2019. The Company reports to ORS that it expects to make a decision on which scenario to select by July 2011.

ORS will defer its position on the costs incurred by SCE&G as a result of Change Order No. 11 until those costs are presented in a revised rates filing.

Aircraft Impact Assessment

On January 19, 2011, the ACRS issued a report on the safety aspects of the Aircraft Impact assessment of the AP1000. In their report to the Chairman of the NRC, the ACRS states, “analyses show that the containment remains intact following the impact of a large commercial aircraft. The reactor core remains cooled, and spent fuel pool integrity is maintained.” A copy of this report is attached as Appendix D.

A NOPR was published on February 24, 2011 in Vol. 76, No. 37 of the Federal Register. This NOPR pertains to the NRC’s proposal to amend its regulations to certify an amendment to the AP1000 standard plant design. The purpose of the amendment is to replace the COL information items and design acceptance criteria with specific design information, address the effects of the impact of a large commercial aircraft, incorporate design improvements, and increase standardization of the design. Comments on this amendment are due by May 10, 2011.

Shaw Modular Solutions (SMS)

In the Report, SCE&G noted deficiencies in SMS’ quality assurance programs involving procedures and documentation, which resulted in manufacturing holds. The NRC scheduled a vendor inspection at the SMS facility in Lake Charles, LA on January 10 – 14, 2011, but this inspection was terminated two days early due to limited fabrication activities at SMS. In response to this inspection, the NRC sent a letter to SMS on January 24, 2011 documenting the outcome of this inspection and requesting additional information from SMS. On February 22, 2011, SMS responded to the NRC and addressed the challenges SMS identified and their proposed corrective actions. SMS stated it expects to be at a high level of production of structural modules in early June 2011 and to ship the first structural sub-module at the end of June 2011. SMS will provide an update when the schedule for the modules is finalized.

In a letter dated March 8, 2011, the NRC stated that SMS was responsive to the NRC’s request and there were no further questions or comments at this time. The NRC also noted that NRC staff may review SMS’ implementation of their corrective actions during a future inspection. This correspondence is attached as Appendix E. SCE&G notified ORS that SMS recently revised their module off-site and on-site fabrication schedules. ORS will continue to follow and report on the status of SMS.

Transmission

On February 28, 2011, SCE&G entered into a contract with Pike Electric for the permitting, engineering and design, procurement of material, and the construction of the four lines needed to serve the Units. This project will consist of two phases. Phase 1 will construct two transmission lines. Line 1 will connect the existing Switchyard at V.C. Summer Unit 1 to the Company's existing Killian Road Substation. Line 2 will be connecting the newly constructed Switchyard ("Switchyard 2") to the Company's existing Lake Murray Substation. Phase 2 will construct two additional transmission lines which will connect Switchyard 2 and the to-be-constructed St. George Substation. The four new transmission lines will occupy existing transmission right of way corridors except for approximately six miles of the Line 1 corridor.

Final Environmental Impact Statement

On April 19, 2011, the NRC and USACE issued the FEIS for the Units. The FEIS states that the NRC and USACE concluded that there are no environmental impacts that would prevent issuing the COL for construction and operation of the Units. The issuance of the FEIS is only part of the COL review. USACE will use the information in the FEIS in making its decision to issue a 404 Wetland Permit, which is required before SCE&G can proceed with construction activities in areas on the site designated as a wetland.

The NRC continues its COL review with a focus on the final safety evaluation report ("SER"). The SER will include recommendations from the ACRS. The final licensing decision will incorporate the FEIS and SER findings, and requires a ruling from the five-member Commission that heads the NRC. A copy of the press release from the NRC is attached as Appendix F.

SCE&G's 2011 1st Quarter Report is due 45 days after March 31, 2011. ORS expects to continue publishing a review evaluating SCE&G's quarterly report.

Appendix A

Santee Cooper Press Release



NEWS RELEASE

March 21, 2011

Media Contact: Mollie Gore
Corporate Communications
843-761-7093
mollie.gore@santeecooper.com

Santee Cooper, OUC enter into letter of intent for share of planned V.C. Summer Station units 2 and 3

MONCKS CORNER, S.C. – Santee Cooper, which joined with SCE&G and filed an application in 2008 to build two new nuclear reactors at the V.C. Summer Nuclear Generating Station, announced today it has signed a letter of intent to negotiate a purchase power agreement with Orlando Utilities Commission (OUC) for a portion of its share of the planned new nuclear project.

Santee Cooper owns 45 percent of the V.C. Summer expansion, and SCE&G owns 55 percent. In 2010, Santee Cooper began evaluating its level of ownership percentage in the new nuclear facilities, a review that continues and has been disclosed with rating agencies and other key stakeholders. V.C. Summer units 2 and 3 are projected to come online in 2016 and 2019.

The letter of intent with OUC is for 5-10 percent of the capacity and output from Santee Cooper's ownership interest in the two new units. The letter of intent also includes as part of the potential transaction an option for OUC's future acquisition of a portion of Santee Cooper's ownership interest.

Established in 1923 by a special act of the Florida Legislature, OUC—The *Reliable One* is the second largest municipal utility in Florida. OUC provides electric and water services to more than 221,000 customers in Orlando, St. Cloud and parts of unincorporated Orange and Osceola counties.

Santee Cooper is South Carolina's state-owned electric and water utility, and the state's largest power producer. The ultimate source of electricity for 2 million South Carolinians, Santee Cooper is dedicated to being the state's leading resource for improving the quality of life for the people of South Carolina. For more information, visit www.santeecooper.com.

Appendix B

Detailed Milestone Schedule as of December 31, 2010

Key:

| | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|
| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 1 | Approve Engineering, Procurement and Construction Agreement | 5/23/2008 | | No | No | 5/23/2008 | |
| 2 | Issue Purchase Orders ("P.O.") to Nuclear Component Fabricators for Units 2 and 3 Containment Vessels | 12/3/2008 | | No | No | 12/3/2008 | |
| 3 | Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator – First Payment - Unit 2 | 8/31/2008 | | No | No | 8/18/2008 | |
| 4 | Contractor Issue P.O. to Accumulator Tank Fabricator – Unit 2 | 7/31/2008 | | No | No | 7/31/2008 | |
| 5 | Contractor Issue P.O. to Core Makeup Tank Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |
| 6 | Contractor Issue P.O. to Squib Valve Fabricator- Units 2 & 3 | 3/31/2009 | | No | No | 3/31/2009 | |
| 7 | Contractor Issue P.O. to Steam Generator Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 8 | Contractor Issue Long Lead Material P.O. to Reactor Coolant Pump Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 9 | Contractor Issue P.O. to Pressurizer Fabricator - Units 2 & 3 | 8/31/2008 | | No | No | 8/18/2008 | |
| 10 | Contractor Issue P.O. to Reactor Coolant Loop Pipe Fabricator - First Payment- Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 11 | Reactor Vessel Internals – Issue Long Lead Material P.O. to Fabricator Units 2 & 3 | 11/21/2008 | | No | No | 11/21/2008 | |
| 12 | Contractor Issue Long Lead Material - P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 13 | Contractor Issue P.O. to Integrated Head Package Fabricator - Units 2 & 3 | 7/31/2009 | | No | No | 7/31/2009 | |
| 14 | Control Rod Drive Mechanism – Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 - First Payment | 6/21/2008 | | No | No | 6/21/2008 | |
| 15 | Issue P.O.s to Nuclear Component Fabricators for Nuclear Island Structural CA20 Modules | 7/31/2009 | | No | No | 8/28/2009 | |
| 16 | Start Site Specific and Balance of Plant Detailed Design | 9/11/2007 | | No | No | 9/11/2007 | |
| 17 | Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 18 | Steam Generator - Issue Final P.O. to Fabricator for Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 19 | Reactor Vessel Internals - Contractor Issue P.O. for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3 | 1/31/2010 | | No | No | 1/29/2010 | |
| 20 | Contractor Issue Final P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 21 | Variable Frequency Drive Fabricator Issue Transformer P.O. - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 22 | Start Clearing, Grubbing and Grading | 1/26/2009 | | No | No | 1/26/2009 | |
| 23 | Core Makeup Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 24 | Accumulator Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 25 | Pressurizer Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 26 | Reactor Coolant Loop Pipe - Contractor Issue P.O. to Fabricator - Second Payment - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 27 | Integrated Head Package - Issue P.O. to Fabricator - Units 2 & 3 - Second Payment | 7/31/2009 | | No | No | 7/31/2009 | |
| 28 | Control Rod Drive Mechanism - Contractor Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 29 | Contractor Issue P.O. to Passive Residual Heat Removal Exchanger Fabricator - Second Payment - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 30 | Start Parr Road Intersection Work | 2/13/2009 | | No | No | 2/13/2009 | |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------------|
| 31 | Reactor Coolant Pump - Issue Final P.O. to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 32 | Integrated Heat Packages Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2009 | | No | No | 10/1/2009 | 1 Month Early |
| 33 | Design Finalization Payment 3 | 1/31/2009 | | No | No | 1/30/2009 | |
| 34 | Start Site Development | 6/23/2008 | | No | No | 6/23/2008 | |
| 35 | Contractor Issue P.O. to Turbine Generator Fabricator - Units 2 & 3 | 2/28/2009 | | No | No | 2/19/2009 | |
| 36 | Contractor Issue P.O. to Main Transformers Fabricator - Units 2 & 3 | 9/30/2009 | | No | No | 9/25/2009 | |
| 37 | Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3 | 11/30/2010 | | No | No | 12/30/2010 | Completed - Delayed 1 Month |
| 38 | Design Finalization Payment 4 | 4/30/2009 | | No | No | 4/30/2009 | |
| 39 | Turbine Generator Fabricator Issue P.O. for Condenser Material - Unit 2 | 8/31/2009 | | No | No | 8/28/2009 | |
| 40 | Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 41 | Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3 | 5/31/2010 | | No | No | 5/27/2010 | |
| 42 | Design Finalization Payment 5 | 7/31/2009 | | No | No | 7/31/2009 | |
| 43 | Start Erection of Construction Buildings Including Craft Facilities for Personnel, Tools, Equipment; First Aid Facilities; Field Offices for Site Management and Support Personnel; Temporary Warehouses; and Construction Hiring Office | 10/9/2009 | | No | No | 12/18/2009 | Delayed 2 Months |
| 44 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2 | 7/31/2009 | | No | No | 8/28/2009 | |
| 45 | Design Finalization Payment 6 | 10/31/2009 | | No | No | 10/7/2009 | |
| 46 | Instrumentation and Control/Simulator - Contractor Issue P.O. to Subcontractor for Radiation Monitor System - Units 2 & 3 | 12/31/2009 | | No | No | 12/17/2009 | |
| 47 | Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 3/31/2011 | No | No | | 3 Months Early |
| 48 | Turbine Generator Fabricator Issue P.O. for Moisture Separator Reheater/Feedwater Heater Material Unit 2 | 4/30/2010 | | No | No | 4/30/2010 | |
| 49 | Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2 | 4/30/2010 | | No | No | 2/18/2010 | 2 Months Early |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|--------------------------------------|
| 50 | Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2 | 10/31/2011 | 11/30/2011 | No | No | | Delayed 1 Month |
| 51 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2 | 6/30/2009 | | No | No | 6/30/2009 | |
| 52 | Contractor Notified That Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2 | 11/30/2010 | | No | No | 12/23/2010 | |
| 53 | Start Excavation and Foundation Work for the Standard Plant for Unit 2 | 3/15/2010 | | No | No | 3/15/2010 | |
| 54 | Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2 | 2/28/2010 | | No | No | 4/30/2010 | Delayed 2 Months |
| 55 | Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2 | 2/28/2010 | | No | No | 12/30/2010 | Completed - Delayed 10 Months |
| 56 | Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2 | 5/31/2010 | | No | No | 5/17/2010 | |
| 57 | Complete Preparations for Receiving the First Module On Site for Unit 2 | 8/18/2010 | | No | No | 1/22/2010 | 7 Months Early |
| 58 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2 | 4/30/2010 | | No | No | 4/21/2010 | |
| 59 | Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2 | 11/30/2010 | | No | No | 11/16/2010 | |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 60 | Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2 | 12/31/2010 | 3/31/2011 | No | No | | Delayed 3 Months |
| 61 | Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2 | 5/31/2011 | 11/30/2011 | No | No | | Delayed 6 Months |
| 62 | Polar Crane Fabricator Issue P.O. for Main Hoist Drum and Wire Rope - Units 2 & 3 | 2/28/2011 | 2/28/2011 | No | No | | |
| 63 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3 | 6/30/2011 | 6/30/2011 | No | No | | |
| 64 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2 | 10/31/2011 | 1/31/2012 | No | No | | Delayed 3 Months |
| 65 | Start Placement of Mud Mat for Unit 2 | 7/14/2011 | 10/11/2011 | No | No | | Delayed 3 Months |
| 66 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2 | 1/31/2011 | | No | No | 9/28/2010 | 4 Months Early |
| 67 | Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2 | 10/31/2010 | 3/31/2011 | No | No | | Delayed 5 Months |
| 68 | Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3 | 2/28/2012 | 2/28/2012 | No | No | | |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 69 | Begin Unit 2 First Nuclear Concrete Placement | 10/3/2011 | 12/28/2011 | No | No | | Delayed 3 Months |
| 70 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2 | 9/30/2011 | 9/30/2011 | No | No | | |
| 71 | Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 3/31/2011 | No | No | | 3 Months Early |
| 72 | Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2 | 5/31/2011 | 9/30/2011 | No | No | | Delayed 4 Months |
| 73 | Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2 | 12/31/2012 | 7/31/2011 | No | No | | 17 Months Early |
| 74 | Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2 | 12/31/2011 | 1/31/2012 | No | No | | Delayed 1 Month |
| 75 | Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2 | 10/31/2010 | 5/31/2011 | No | No | | Delayed 7 Months |
| 76 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2 | 6/30/2011 | 10/31/2011 | No | No | | Delayed 4 Months |
| 77 | Design Finalization Payment 14 | 10/31/2011 | 10/31/2011 | No | No | | |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 78 | Set Module CA04 For Unit 2 | 1/27/2012 | 4/12/2012 | No | No | | Delayed 2 Months |
| 79 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2 | 6/30/2010 | 2/28/2011 | No | No | | Delayed 8 Months |
| 80 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2 | 1/31/2011 | 10/31/2011 | No | No | | Delayed 9 Months |
| 81 | Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2 | 2/28/2012 | 10/31/2012 | No | No | | Delayed 8 Months |
| 82 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3 | 8/31/2013 | 7/31/2013 | No | No | | 1 Month Early |
| 83 | Set Containment Vessel Ring #1 for Unit 2 | 4/3/2012 | 7/26/2012 | No | No | | Delayed 4 Months |
| 84 | Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2 | 3/31/2012 | 12/31/2011 | No | No | | 3 Months Early |
| 85 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3 | 8/31/2013 | 1/31/2013 | No | No | | 7 Months Early |
| 86 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3 | 9/30/2012 | 9/30/2012 | No | No | | |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 87 | Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3 | 1/31/2013 | 10/31/2011 | No | No | | 15 Months Early |
| 88 | Set Nuclear Island Structural Module CA03 for Unit 2 | 8/30/2012 | 12/10/2012 | No | No | | Delayed 3 Months |
| 89 | Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2 | 5/31/2012 | 6/30/2012 | No | No | | Delayed 1 Month |
| 90 | Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 12/31/2012 | 12/31/2012 | No | No | | |
| 91 | Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2 | 7/31/2012 | 3/31/2013 | No | No | | Delayed 8 Months |
| 92 | Start Containment Large Bore Pipe Supports for Unit 2 | 4/9/2012 | 7/10/2012 | No | No | | Delayed 3 Months |
| 93 | Integrated Head Package - Shipment of Equipment to Site - Unit 2 | 10/31/2012 | 2/28/2013 | No | No | | Delayed 4 Months |
| 94 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2 | 11/30/2012 | 10/31/2012 | No | No | | 1 Month Early |
| 95 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3 | 5/31/2013 | 4/30/2013 | No | No | | 1 Month Early |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 96 | Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2 | 5/31/2012 | 7/31/2012 | No | No | | Delayed 2 Months |
| 97 | Start Concrete Fill of Nuclear Island Structural Modules CA01 and CA02 for Unit 2 | 2/26/2013 | 6/13/2013 | No | No | | Delayed 3 Months |
| 98 | Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2 | 4/30/2012 | 3/31/2012 | No | No | | 1 Month Early |
| 99 | Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2 | 2/28/2013 | 2/28/2013 | No | No | | |
| 100 | Deliver Reactor Vessel Internals to Port of Export - Unit 2 | 7/31/2013 | 8/31/2013 | No | No | | Delayed 1 Month |
| 101 | Set Unit 2 Containment Vessel #3 | 4/17/2013 | 7/31/2013 | No | No | | Delayed 3 Months |
| 102 | Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2 | 3/31/2013 | 2/28/2013 | No | No | | 1 Month Early |
| 103 | Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2 | 4/30/2013 | 3/31/2013 | No | No | | 1 Month Early |
| 104 | Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 2/28/2014 | 9/30/2013 | No | No | | 5 Months Early |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 105 | Polar Crane - Shipment of Equipment to Site - Unit 2 | 5/31/2013 | 11/30/2013 | No | No | | Delayed 6 Months |
| 106 | Receive Unit 2 Reactor Vessel On Site From Fabricator | 5/20/2013 | 9/5/2013 | No | No | | Delayed 3 Months |
| 107 | Set Unit 2 Reactor Vessel | 6/18/2013 | 10/2/2013 | No | No | | Delayed 3 Months |
| 108 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3 | 12/31/2013 | 11/30/2013 | No | No | | 1 Month Early |
| 109 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3 | 8/31/2014 | 2/28/2014 | No | No | | 6 Months Early |
| 110 | Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2 | 9/30/2013 | 8/31/2013 | No | No | | 1 Month Early |
| 111 | Place First Nuclear Concrete for Unit 3 | 8/1/2013 | 8/1/2013 | No | No | | |
| 112 | Set Unit 2 Steam Generator | 9/9/2013 | 1/6/2014 | No | No | | Delayed 4 Months |
| 113 | Main Transformers Ready to Ship - Unit 2 | 9/30/2013 | 6/30/2013 | No | No | | 3 Months Early |

Key:

| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 114 | Complete Unit 3 Steam Generator Hydrotest At Fabricator | 2/28/2014 | 3/31/2014 | No | No | | Delayed 1 Month |
| 115 | Set Unit 2 Containment Vessel Bottom Head on Basemat Legs | 11/21/2011 | 3/2/2012 | No | No | | Delayed 3 Months |
| 116 | Set Unit 2 Pressurizer Vessel | 1/24/2014 | 5/19/2014 | No | No | | Delayed 4 Months |
| 117 | Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3 | 2/28/2015 | 3/31/2015 | No | No | | Delayed 1 Month |
| 118 | Deliver Reactor Vessel Internals to Port of Export - Unit 3 | 6/30/2015 | 6/30/2015 | No | No | | |
| 119 | Main Transformers Fabricator Issue P.O. for Material - Unit 3 | 4/30/2014 | 4/30/2014 | No | No | | |
| 120 | Complete Welding of Unit 2 Passive Residual Heat Removal System Piping | 3/19/2014 | 7/14/2014 | No | No | | Delayed 4 Months |
| 121 | Steam Generator Contractor Acceptance of Equipment At Port of Entry - Unit 3 | 4/30/2015 | 1/31/2015 | No | No | | 3 Months Early |
| 122 | Refueling Machine - Shipment of Equipment to Site - Unit 3 | 5/31/2014 | 5/31/2014 | No | No | | |
| 123 | Set Unit 2 Polar Crane | 4/3/2014 | 7/18/2014 | No | No | | Delayed 3 Months |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|
| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 124 | Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3 | 6/30/2015 | 8/31/2015 | No | No | | Delayed 2 Months |
| 125 | Main Transformers Ready to Ship - Unit 3 | 9/30/2014 | 6/30/2015 | No | No | | Delayed 9 Months |
| 126 | Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3 | 12/31/2014 | 6/30/2014 | No | No | | 6 Months Early |
| 127 | Start Electrical Cable Pulling in Unit 2 Auxiliary Building | 12/26/2014 | 4/23/2015 | No | No | | Delayed 4 Months |
| 128 | Complete Unit 2 Reactor Coolant System Cold Hydro | 8/3/2015 | 6/12/2015 | No | No | | 2 Months Early |
| 129 | Activate Class 1E DC Power in Unit 2 Auxiliary Building | 3/5/2015 | 11/13/2014 | No | No | | 4 Months Early |
| 130 | Complete Unit 2 Hot Functional Test | 9/21/2015 | 9/21/2015 | No | No | | |
| 131 | Install Unit 3 Ring 3 for Containment Vessel | 7/30/2015 | 4/14/2015 | No | No | | 3 Months Early |
| 132 | Load Unit 2 Nuclear Fuel | 10/28/2015 | 12/16/2015 | No | No | | Delayed 1 Month |
| 133 | Unit 2 Substantial Completion | 4/1/2016 | 4/1/2016 | No | No | | |

Key:

| | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|
| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|--------------------------|--------------------------|-----------------|---------------------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 134 | Set Unit 3 Reactor Vessel | 10/1/2015 | 6/15/2015 | No | No | | 3 Months Early |
| 135 | Set Unit 3 Steam Generator #2 | 12/22/2015 | 9/11/2015 | No | No | | 3 Months Early |
| 136 | Set Unit 3 Pressurizer Vessel | 5/16/2016 | 8/1/2016 | No | No | | Delayed 2 Months |
| 137 | Complete Welding of Unit 3 Passive Residual Heat Removal System Piping | 6/20/2016 | 4/20/2016 | No | No | | 2 Months Early |
| 138 | Set Unit 3 Polar Crane | 7/18/2016 | 6/5/2016 | No | No | | 1 Month Early |
| 139 | Start Unit 3 Shield Building Roof Slab Rebar Placement | 1/16/2017 | 10/15/2016 | No | No | | 3 Months Early |
| 140 | Start Unit 3 Auxiliary Building Electrical Cable Pulling | 4/6/2017 | 2/22/2017 | No | No | | 1 Month Early |
| 141 | Activate Unit 3 Auxiliary Building Class 1E DC Power | 6/9/2017 | 4/18/2016 | No | No | | 14 Months Early |
| 142 | Complete Unit 3 Reactor Coolant System Cold Hydro | 1/1/2018 | 8/23/2017 | No | No | | 4 Months Early |
| 143 | Complete Unit 3 Hot Functional Test | 2/15/2018 | 5/17/2018 | No | No | | Delayed 3 Months |

Key:

| | | | |
|---------------------------------|---------------------------------|------------------------|--|
| Milestones Not Completed | Completed Prior to Q4-10 | Current Quarter | Scheduled to Be Completed Q1-11 |
|---------------------------------|---------------------------------|------------------------|--|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q4-10 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|-----------------------------------|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 144 | Complete Unit 3 Nuclear Fuel Load | 7/31/2018 | 7/19/2018 | No | No | | |
| 145 | Begin Unit 3 Full Power Operation | 10/31/2018 | 10/23/2018 | No | No | | |
| 146 | Unit 3 Substantial Completion | 1/1/2019 | 1/1/2019 | No | No | | |

Notes:

White highlighting represents Future or Historical Milestones that have not been completed.

Grey highlighting represents Future or Historical Milestones that were completed prior to the 4th Quarter 2010.

Yellow highlighting represents those Milestones that are scheduled to be or have been completed during the 4th Quarter 2010. This is based on the schedule approved by the Commission in Order No. 2010-12

Green highlighting represents Future Milestones that are scheduled to be completed in the 1st Quarter 2011. This is based on the schedule approved by the Commission in Order No. 2010-12

Red highlighting represents "Caution Milestones." Caution Milestones are those that are delayed by 10 months or greater.

Appendix C

Construction Site Pictures

CB&I PADS



10/5/10



BLDG 9 NORTH SIDE EXTERIOR

10/5/10

TABLE TOP DEVELOPMENT



10/5/10

Switchyard Support Foundations



Switchyard Equipment Staging Area



10/5/10

Appendix D
ACRS Correspondence



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001

December 13, 2010

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: REPORT ON THE FINAL SAFETY EVALUATION REPORT ASSOCIATED
WITH THE AMENDMENT TO THE AP1000 DESIGN CONTROL DOCUMENT

Dear Chairman Jaczko:

During the 578th meeting of the Advisory Committee on Reactor Safeguards (ACRS), December 2-4, 2010, we reviewed the NRC staff's Advanced Final Safety Evaluation Report (AFSER) for the pending AP1000 Design Certification Amendment (DCA) application. The amendment is to be reflected in a revision to the AP1000 Design Control Document (DCD). The amendment involves changes to Tier 1 information, and its approval will require rulemaking. We had a number of subcommittee and full committee meetings to review the technical aspects of the amendment. During these meetings, we had the benefit of discussions with representatives of the NRC staff, Westinghouse Electric Company (WEC), and members of the public. We also had the benefit of the documents referenced.

CONCLUSION AND RECOMMENDATION

The changes proposed in the AP1000 DCA maintain the robustness of the previously certified design. We conclude that there is reasonable assurance that the revised design can be built and operated without undue risk to the health and safety of the public. This conclusion is contingent on the results of our concurrent reviews of the aircraft impact assessment and long-term core cooling issues which will be discussed in separate letters.

This conclusion relies in part on information and commitments provided by WEC during the course of our meetings which have not yet been confirmed to be included in the DCA application. This information and commitments are noted in the discussion following, and the staff should ensure they are appropriately documented as part of the DCA.

BACKGROUND

For its initial design approval and certification of the AP1000 design, the NRC issued NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Design," in September 2004 and published the proposed design certification rule on April 18, 2005. In December 2005, the NRC staff evaluated the conforming Revision 15 to the AP1000 DCD in Supplement 1 to NUREG-1793. The NRC published a final rule certifying the AP1000 standard plant design on January 27, 2006.

Thus, the existing AP1000 certification rule is reflected in DCD Revision 15. Revision 18 was submitted by WEC in a letter dated December 1, 2010, and it includes changes identified in Revision 16, submitted May 26, 2007, and in Revision 17, submitted September 22, 2008, as well as those changes made subsequent to submittal of Revision 17 which are identified in the AFSER, Chapter 23.

In addition, WEC submitted letters to supplement its DCA application dated October 26, November 2, and December 12, 2007, as well as January 11, and 14, 2008. Finally, NuStart Energy Development, LLC and WEC submitted a number of technical reports (TRs) for review. TRs typically address a topical area, such as the design of a component, structure, or process, in support of the AP1000 design.

The DCA application proposes to incorporate changes in the AP1000 certification rule reflecting the following:

- Design standardization, which was enhanced by elimination of numerous combined license (COL) open items currently in the existing rule.
- New regulatory requirements, including requirements related to aircraft impact. (As previously noted, review of compliance with the aircraft impact requirements will be discussed in a separate letter).
- Design finalization, which was required to produce construction drawings and procurement specifications. This includes reduced reliance on design acceptance criteria (DAC).

Significant changes proposed in the DCA application include the following:

- Redesign of the shield building to use a modular, steel concrete composite (SC) structure, replacing the existing reinforced concrete (RC) design. The redesign reduces passive heat removal air flow and affects seismic, aircraft impact, and other loading analyses.
- Redesign of the Reactor Vessel Support System to increase stiffness.
- Increase in the range of foundation soil conditions considered.
- Closure of four digital instrumentation and control (DI&C) DAC, with only one remaining open. Numerous I&C changes were made to reflect design evolution, such as addition of a reactor trip function, implementation of a rod withdrawal prohibit, and modification of the containment isolation logic for the Component Cooling System.
- Closure of four human factors engineering (HFE) DAC, with none remaining open.
- Modification of the reactor coolant pump (RCP) design, including an increase in its rotational inertia.
- Addition of a flow skirt at the inlet to the reactor vessel lower plenum.
- Redesign of the Steam and Power Conversion Systems.

Our review of the DCA application began with a status review by the Full Committee during the 562nd meeting in May 2009. Subsequently, our AP1000 subcommittee held 12 meetings, totaling 21 days of meetings, as listed in the appendix to this letter.



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

January 19, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**SUBJECT: REPORT ON THE SAFETY ASPECTS OF THE AIRCRAFT IMPACT
ASSESSMENT FOR THE WESTINGHOUSE ELECTRIC COMPANY AP1000
DESIGN CERTIFICATION AMENDMENT APPLICATION**

Dear Chairman Jaczko:

During the 579th meeting of the Advisory Committee on Reactor Safeguards, January 13-15, 2011, we reviewed the staff's Safety Evaluation Report (SER) on the Aircraft Impact Assessment (AIA), which is part of the Westinghouse Electric Company (WEC or the Applicant) AP1000 Design Certification Amendment (DCA) application. Our AP1000 subcommittee held meetings on November 2-3, November 17-19, and December 15-16, 2010, and reviewed the staff's SER and AIA inspection report. During these meetings, we had the benefit of discussions with representatives of the NRC staff and WEC. The AIA was made available to us by the applicant for review prior to our AP1000 subcommittee meeting of November 2-3, 2010. We also had the benefit of the documents referenced. This letter fulfills the requirement of 10 CFR 52.53 that the ACRS report on those portions of the application which concern safety.

CONCLUSION AND RECOMMENDATION

The WEC AIA for the design described in the AP1000 DCA application, as modified to resolve NRC inspection findings, complies with the requirements of 10 CFR 50.150. Analyses show that the containment remains intact following the impact of a large commercial aircraft. The reactor core remains cooled, and spent fuel pool integrity is maintained.

The staff should evaluate information and analyses presented to the ACRS, but not subjected to staff review or inspection, to determine if there is a need for further revision of the design control document (DCD), or a need for further inspections.

-2-

BACKGROUND

The results of the AP1000 AIA are a part of the AP1000 DCA application. The AP1000 design was previously certified and the existing AP1000 certification rule references DCD Revision 15. DCD Revision 18 was submitted by WEC in a letter dated December 1, 2010, and it incorporates changes in Revision 16, submitted on May 26, 2007; in Revision 17, submitted on September 22, 2008; as well as those changes made subsequent to the submittal of Revision 17, which are identified in Chapter 23 of the Advanced Final Safety Evaluation Report. We held a series of meetings with the NRC staff and the applicant on the AP1000 DCA application. We wrote a letter, dated December 13, 2010, following our review of the amendment. Our assessment of the AP1000 AIA was not included in the letter.

As required by 10 CFR 50.150, applicants for new nuclear power plants must perform an assessment of the effects of the impact of a large, commercial aircraft. Using realistic analyses, applicants must identify and incorporate into the facility those design features and functional capabilities needed to show that, with reduced use of operator action; (1) the reactor core remains cooled or the containment remains intact, and (2) spent fuel cooling or spent fuel pool integrity is maintained (referred to as the acceptance criteria). Applicants are required to submit a description of the design features and functional capabilities relied upon in the AIA and a description of how these features and capabilities ensure that the acceptance criteria are met. Since the impact of a large, commercial aircraft is a beyond-design-basis event, applicants may use non-safety-related features or capabilities to satisfy the requirements of 10 CFR 50.150.

From September 27, 2010, through October 1, 2010, the staff conducted an inspection of the WEC AP1000 AIA. Based on the results of this inspection, the staff determined that NRC requirements had not been fully met. The inspection revealed that WEC did not use realistic analyses for certain aspects of its AIA and did not fully identify and incorporate into the DCD those design features and functional capabilities credited. WEC responded to the inspection report and proposed corrective actions in its letter to the NRC dated November 12, 2010. The staff issued a letter, dated November 23, 2010, stating that the proposed corrective actions were satisfactory. The staff may review the implementation of the corrective actions during a future inspection to determine that full compliance has been achieved and maintained.

DISCUSSION

The AIA performed by the applicant uses the industry guidance in NEI 07-13, Revision 7, endorsed in Draft Regulatory Guide DG-1176. The results of the AIA show that the modified AP1000 design, described in the application, meets the acceptance criteria of the AIA rule by maintaining containment integrity and spent fuel pool integrity.

-3-

The key AP1000 design features identified by WEC to satisfy the requirements of 10 CFR 50.150 include: presenting a small target with a reduced set of safety-related structures, systems, and components (SSCs); a redesigned shield building which protects the steel containment vessel from penetration due to impact¹; simplified, passive safety equipment for core cooling; no active equipment required for spent fuel pool cooling; and redundancy and defense-in-depth in equipment design. In accordance with 10 CFR 50.150, WEC provided an assessment in the respective technical areas of structures, reactor systems, fire, and shock.

For the structural assessment, WEC used the impulse curve supplied by the NRC and the finite element analysis code LS-DYNA. All of the aircraft strikes analyzed using this code was on the shield building. The redesigned shield building, using a modular, steel concrete composite (SC) structure, reduces passive heat removal air flow. The effects of air flow reduction on containment integrity during accidents were analyzed and shown to be acceptable. Based on the results of the assessment, WEC concluded, and the staff agreed, that both the containment and spent fuel pool remain intact and that core and spent fuel cooling are maintained.

During our November 2-3, 2010 AP1000 subcommittee meeting, we questioned whether the worst-case locations for aircraft impact had been considered. WEC addressed this issue during our November 17-19, 2010, AP1000 subcommittee meeting.

The AP1000 shield building includes a 32 ft. diameter opening in the conical roof which is an essential feature of the passive containment cooling design. This opening is surrounded by the Passive Containment Cooling System water storage tank. During our November 2-3, 2010, subcommittee meeting, issues arose concerning the potential for significant aircraft impact debris to pass through the opening and impact the steel containment vessel. WEC conducted appropriate analyses, which we reviewed during our November 17-19, 2010, subcommittee meeting. Using realistic assumptions for the impact locations of concern, these analyses demonstrated that no significant debris would impact the steel Containment Vessel (CV). In addition, WEC performed a more conservative analysis in which a large mass consisting of debris and the shield plate, was assumed to fall on the steel CV. This impact resulted in only a relatively small amount of plastic deformation and no penetration of the CV.

Our December 13, 2010, letter concerning the AP1000 DCA application describes the SC design, including the addition of tie bars between opposite faceplates of the SC modules. The spacing of these tie bars is smaller in areas of higher, out-of-plane, design basis shear demands - i.e., near discontinuities and connections - than it is in the majority of the shield building wall structure where these demands are lower. Aircraft impacts, unlike design basis events, can impart high out-of-plane shear demands in regions of the shield building wall with greater tie bar spacing. As discussed in our letter of December 13, 2010, these areas can fail in

¹ The shield building redesign is discussed in our letter dated December, 13, 2010.

-4-

a non-ductile manner under such loads. In order to assure acceptable realism in the analyses, it must be demonstrated that the finite element models used in the AIA adequately describe this non-ductile behavior under high out-of-plane shear loads. WEC provided comparisons of the predictions of the LS-DYNA model with an experiment on a beam representing a SC structure with greater tie bar spacing under high out-of-plane shear loads. The load-deformation behavior predicted by the model agreed well with the results of the experiment; the comparison adequately supports the use of the model for these analyses.

In addition to the possibility of global structural failure, there is also a potential for local failure due to penetration by hard objects such as an engine or landing gear. The AIA analysis included comparisons of the predictions of the LS-DYNA model with penetration tests conducted in Japan on SC structures. The predictions show adequate agreement with the tests. Although the geometry of the specimens in these tests differs from that of the shield building, the comparisons support the use of the model to predict local failures associated with aircraft impact.

WEC demonstrated that AIA requirements with respect to core and spent fuel cooling are met. This is because the systems required for design basis core cooling are located inside containment, which is protected by the redesigned shield building, and there are no active systems required for cooling of spent fuel. In addition, WEC demonstrated that at least one backup water source is always available for cooling.

Similarly, for the fire aspect of AIA, based on the limited systems required for core cooling in the AP1000, and their location within the intact containment, WEC demonstrated that the requirements of 10 CFR 50.150 are met.

Finally, with regard to the effects of shock associated with aircraft impact, WEC demonstrated that these shock loadings are less than those resulting from a design basis seismic event.

The AP1000 AIA was reviewed in parallel with the development of DCD Revision 18, which was submitted on December 1, 2010. Also, the staff conducted an inspection of the AIA and resolved their findings with WEC, as described in a letter dated November 23, 2010. In parallel with these activities, we conducted subcommittee meetings to review the AIA during which WEC responded with information and analyses, some of which may not be reflected in the DCD, as revised, or within the scope of the staff's inspection. In view of these parallel activities, the staff should evaluate information and analyses presented to the ACRS, but not subjected to staff review or inspection, to determine if there is a need for further revision of the DCD, or a need for further inspections.

-5-

The AIA for the design described in the AP1000 DCA application, as modified to resolve the staff's inspection findings, complies with the requirements of 10 CFR 50.150. Following the impact of a large commercial aircraft, the containment remains intact, the reactor core remains cooled, and spent fuel pool integrity is maintained.

Sincerely,

/RA/

Said Abdel-Khalik
Chairman

REFERENCES

1. U.S. Nuclear Regulatory Commission, "Advanced Copy of the Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design" various dates 2010 (ML103260072)
2. Letter to U.S. Nuclear Regulatory Commission, "Westinghouse Application to Amend the AP1000 Design Certification," APP-GW-GL-700, Revision 16, May 26, 2007 (ML071580757)
3. Letter to U.S. Nuclear Regulatory Commission, "Update to Westinghouse's Application to Amend the AP1000 Design Certification Rule," APP-GW-GL-700, Revision 17, September 22, 2008 (ML083220482)
4. Westinghouse Electric Company, AP1000 Design Control Document (DCD), APP-GW-GL-700, Revision 18, December 1, 2010 (ML103480059 and ML103480572)
5. NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design (NUREG-1793)" September 2004 (ML043450344, ML043450354, ML043450284, ML043450290, and ML043450274)
6. NUREG-1793, Supplement 1, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," December 2005 (ML060330557)
7. ACRS letter to the NRC Chairman on the AP1000 DCD amendment review, December 13, 2010 (ML103410351)
8. NRC Letter to WEC on "Ap1000 Pressurized Water Reactor Design Aircraft Impact Assessment Inspection, NRC Inspection Report No. 05200006/2010-203 and Notice of Violation," October 28, 2010 (ML10298058311)
9. WEC response to NRC on "Reply to Notice of Violation Cited in NRC Inspection Report No.: 05200006/2010-203 dated October 28, 2010," November 12, 2010 (ML1032104091)
10. NRC closure letter on "Westinghouse Electric Company Response To U.S. Nuclear Regulatory Commission (NRC) Inspection Report [05200006/2010-203] and Notice of Violation," November 23, 2010 (ML1032604471)

-6-

11. NRC Letter, "Aircraft Impact Assessment for New Reactor Designs," May 17, 2007 (ML071360212)
12. NRC Letter, "Issuance of Order Imposing Safeguards Information Protection Requirements and Fingerprinting and Criminal History Records Check Requirements for Access to Safeguards Information," September 12, 2007 (ML072220401)

-6-

13. NRC Letter, "Aircraft Impact Assessment for New Reactor Designs," May 17, 2007, ML071360212
14. NRC Letter, "Issuance of Order Imposing Safeguards Information Protection Requirements and Fingerprinting and Criminal History Records Check Requirements for Access to Safeguards Information," September 12, 2007, ML072220401)

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| DATE | 01/19/11 | 01/19/11 | 01/19/11 | 01/19/11 | 01/19/11 |

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Appendix E

Shaw Modular Solutions Correspondence

January 24, 2011

Mr. Jack H. Martin
Senior Vice President, North American Operations
Shaw Fabrication & Manufacturing Group, Shaw Modular Solutions, LLC
3191 West Lincoln Road
Lake Charles, LA 70605

SUBJECT: NRC VENDOR INSPECTION OF SHAW MODULAR SOLUTIONS (SMS)
APPENDIX B TO 10 CFR PART 50 QUALITY ASSURANCE AND 10 CFR PART
21 PROGRAMS AT THE SMS LAKE CHARLES, LA, FACILITY

Dear Mr. Martin:

This letter documents the outcome of an NRC vendor inspection conducted on January 10 through January 12, 2011, at the Shaw Modular Solutions (SMS) facility in Lake Charles, LA. The NRC inspection was terminated early due to the current status of activities at SMS. Therefore, an inspection of the effective implementation of the Appendix B to 10 CFR Part 50 (Appendix B) and 10 CFR Part 21 programs was not feasible. An inspection report will not be issued.

Although the inspection ended prematurely, the NRC inspection team gained valuable insights regarding the technical and programmatic challenges that SMS is currently facing. Accordingly, we request that SMS respond to this letter addressing the following:

1. a description of the technical and programmatic challenges that SMS has identified during its self-assessment conducted in December 2010;
2. the proposed corrective actions that SMS plans on implementing to address the technical and programmatic challenges;
3. the date SMS expects to be in full production of structural and mechanical AP1000 sub-modules and;
4. the expectant date of the first shipment of AP1000 sub-module(s).

Based on your letter, the NRC will plan a future inspection at your facility to verify the implementation of the SMS Appendix B and 10 CFR Part 21 programs and to assess the effectiveness of your corrective actions.

Please provide a written response within 30 days from the date of this letter in accordance with the instructions specified below. We will consider extending the response time if you show good cause for us to do so.

J. Martin

- 2 -

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response, (if applicable), should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,
/RA/

Juan D. Peralta, Chief
Quality and Vendor Branch 1
Division of Construction Inspection and
Operational Programs
Office of New Reactors

Docket No. 99901401

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The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions

February 22, 2011

Page 1 of 3

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Shaw Modular Solutions (SMS) response to NRC letter to SMS dated January 24, 2011;
regarding NRC Vendor Inspection of SMS conducted from January 10 to 12, 2011

Reference: Docket number 99901-401

This letter and its Enclosure provide the SMS response to the subject letter. As requested, information is provided regarding the technical and programmatic challenges that SMS has identified, plus the proposed corrective actions that SMS plans on implementing to address those challenges.

The technical and programmatic challenges that SMS has identified since initiation of fabrication activities in May 2010 are in the areas of:

- Quality Assurance
- Training
- Corrective Action
- Management Oversight
- Welding
- Material and Nonconforming Material Control

Actions have been taken to assemble and trend the challenges that have been identified, plus the feedback received from Shaw Nuclear Services (SNS) and their AP1000 clients. Analysis of the feedback identified a commonality of issues which facilitated the development of an action plan to address the challenges. The actions are related to the following general topics:

- Nuclear Safety Culture
- Quality Assurance
- Nuclear Fundamentals
 - Corrective Action Program
 - Procedure Quality, Use and Adherence
 - Human Performance
 - Training
 - Management Oversight

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NR0



The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions

February 22, 2011

Page 2 of 3

Subject: SMS response to NRC letter dated January 24, 2011, cont'd

- Process Improvement
 - General
 - Welding
 - Work Control
 - Material Control

SMS is committed to enhancing and maintaining a sustainable nuclear safety culture and regulatory compliance program that demonstrates our understanding of regulatory compliance and meets or exceeds the appropriate regulations.

In addition to the above-requested information, the subject letter requested that SMS provide dates regarding when SMS expects to be in full production of structural and mechanical AP1000 sub-modules, and the expected date of the first shipment of AP1000 modules.

SMS expects to be at a high level of production of structural modules in early June 2011. SMS expects that shipment of the first structural sub-module will occur the end of June 2011. Fabrication of mechanical modules will follow the structural modules. SMS will provide an update when the schedule for the mechanical modules is finalized. If schedule changes are necessary, SMS will promptly notify the NRC.

Several challenge areas have been identified as a result of recent assessments, audits and program implementation. SMS is committed to the establishment and maintenance of a nuclear safety culture and regulatory compliance program that demonstrates our understanding of regulatory compliance and meets or exceeds the appropriate regulations.

SMS appreciates the resources necessary to establish, and the efforts required to implement, a regulatory compliance program that demonstrates the level of effectiveness expected for the scope of supply we are providing to the nuclear industry. We recognize the importance of having a management team that possesses nuclear industry experience, and/or is supplemented by other experienced individuals until such time as that experience is acquired internally. We are taking, and will continue to take, actions in that area. We recognize and embrace an environment of continuously rising standards and process improvement. We have taken, are taking and will continue to take those actions needed to elevate our program implementation to the level of effectiveness appropriate to the fabrication of AP1000 modules.

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**The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions**

February 22, 2011

Page 3 of 3

Subject: SMS response to NRC letter dated January 24, 2011, cont'd.

SMS regrets that the status of activities at the time of the NRC inspection did not facilitate completion of the inspection as planned. We trust that the information provided in this letter and its Enclosure is satisfactory. If any further information or clarification is needed, please do not hesitate to contact me.

Very truly yours,

Joseph L. Ernst
Executive Vice President
Shaw Modular Solutions

Enclosure

C: D. Chapman
J. H. Martin
M. Moser
R. Rehkugler
SMS Document Control

J. Peralta, Chief
Quality and Vendor Branch 1
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**The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions**

Enclosure to SMS response to NRC letter dated January 24, 2011

Page 1 of 5

This Enclosure provides the Shaw Modular Solutions (SMS) reply to items 1 and 2 of the United States Nuclear Regulatory Commission (NRC) letter dated January 24, 2011. NRC Request items 3 and 4 are addressed in the letter transmitting this enclosure.

NRC REQUEST

1. (Provide) a description of the technical and programmatic challenges that SMS has identified during its self-assessment conducted in December 2010.

SMS RESPONSE

In addition to the self-assessments conducted in December 2010, multiple audits and assessments were performed in 2010, pertinent conclusions of which are included in this response for completeness. SMS identified one issue related to welding capabilities as a technical challenge area. All other challenge areas are considered to be programmatic in nature. The corresponding corrective actions for each issue are addressed in the response to NRC Request item 2.

A) Quality Assurance

Through various self-assessments and external reviews, SMS has determined that the Quality Assurance (QA) organization was not sufficiently independent from the execution of program activities. Members of the QA organization were frequently relied on to develop and implement processes and procedures. The skills and knowledge level of some members of the QA organization require improvement.

B) Training

Assessments, Corrective Action Reports (CAR) and other sources of input identified weaknesses in the SMS training program. Effectiveness improvement in several areas, including QA, Quality Control (QC), welding and material control, are needed.

C) Corrective Action Program (CAP)

The CAP had not been effectively implemented with regard to timely issue identification and resolution, resolution adequacy, and determination of the cause(s) for significant conditions adverse to quality.



**The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions**

Enclosure to SMS response to NRC letter dated January 24, 2010, cont'd.

Page 2 of 5

D) Management Oversight

The level and effectiveness of management oversight of daily activities was determined to be inadequate based on the quality of work, including fabrication and process development activities, performed to date.

E) Welding capabilities

A self-assessment concluded that improvement was needed with regard to the welding skills and technical knowledge of a number of SMS welding personnel.

F) Material and Nonconforming Material Controls

An internal audit identified that material storage areas were not clearly marked, including differentiation of nonconforming materials. Additionally, controls for tracking receipt and use of materials needed improvement.

NRC REQUEST

2. (Provide) the proposed corrective actions that SMS plans on implementing to address the technical and programmatic challenges.

SMS RESPONSE

After the recent NRC inspection at SMS, actions were taken to assemble and trend the challenges that had been self-identified or raised by other entities. These analyses resulted in the development of an action plan to address the challenges. The following topics are the focus of the plan.

- Nuclear Safety Culture
- Quality Assurance
- Nuclear Fundamentals
 - Corrective Action Program
 - Procedure Quality, Use and Adherence
 - Human Performance
 - Training
 - Management Oversight



**The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions**

Enclosure to SMS response to NRC letter dated January 24, 2010, cont'd.

Page 3 of 5

- Process Improvement
 - General
 - Welding
 - Work Control
 - Material Control

The goal of the action plan is to ingrain nuclear industry expectations and high standards into the workforce and processes. The plan is designed to ensure regulatory margin above minimum compliance. The status of this plan is updated routinely, with periodic status reports to SNS and its AP1000 clients.

A comprehensive listing of actions related to each of these categories has been developed and populated with owners and specific due dates. The action items have been prioritized to support the production and shipment dates referenced in this letter. The actions provided below are correlated to the challenge areas identified in the response to NRC Request item 1 above.

A) Quality Assurance

1. Establish independence of the QA and QC organizations by realigning organizational responsibilities.
2. Revise the SMS QA Manual and implementing procedures to reflect organization and process changes.
3. Determine the need for additional resources.

B) Training

1. Establish training standards and expectations for each department.
2. Ensure SMS management is familiar with the relevant lessons learned that are identified in NUREG-1055, "Improving Quality and the Assurance of Quality in the Design and Construction of Nuclear Power Plants", and is committed to avoiding the concerns raised in NUREG-1055.
3. Improve the process and tools in place to ensure ongoing personnel training effectiveness.
4. Enhance SMS personnel understanding of the importance of training and ensure that they are fully capable of and committed to effectively administering the training.
5. Develop performance metrics to assess the effectiveness of SMS training.
6. Improve the technical process/procedural knowledge and welding skills of SMS welding personnel.



**The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions**

Enclosure to SMS response to NRC letter dated January 24, 2010, cont'd.

Page 4 of 5

7. Improve the methods by which requisite skills and knowledge are identified, evaluated, imparted and measured for existing and future/incoming welding personnel.
8. Conduct additional training to improve the skills and knowledge of existing and future/incoming QA management and staff personnel.
9. Reinforce and confirm QC personnel understanding of the expectations and standards applicable to working in a nuclear safety related work environment.
10. Train all employees on expectations and use of the CAP.

C) Corrective Action Program (CAP)

1. Transfer "ownership" and administration of the CAP from the Independent Oversight organization to the Operations organization.
2. Deploy new CAP process attributes (e.g., electronic tracking, trending program, Corrective Action Review board, performance metrics) to improve the level of CAP sophistication and effectiveness.
3. Resolve the Significant Conditions Adverse to Quality (SCAQ) that have been previously identified.
4. Perform a common cause evaluation related to current and past SCAQs.
5. Implement the CAP in a manner to ensure that SMS work processes receive ongoing scrutiny to identify and implement identified improvements, contributing to identifying potential problems before they manifest themselves.
6. Revise the CAP process to allow entry of conditions by any employee.

D) Management Oversight

1. Reinforce, on an ongoing basis, the expectations of a nuclear safety related work environment and the need to utilize and adhere to established procedural requirements.
2. Enhance the amount and quality of SMS management/supervisory oversight of daily work activities.
3. Develop, issue and use a procedure for pre-job briefings, including standard criteria, actions, responsibilities, schedule, communication and quality expectations.

E) Welding capabilities

1. Develop, issue, and use a SMS Welding Manual that addresses applicable Code requirements.



**The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions**

Enclosure to SMS response to NRC letter dated January 24, 2010, cont'd.

Page 5 of 5

2. Develop, issue, and use a listing of fabrication standards and acceptance criteria for welders, fitters and supervisors.
3. Update the Weld Log portion of the Shop Traveler to include documentation of all weld-related activities.
4. Develop, issue, and use a Standard Repair procedure for welding activities.

F) Material and Nonconforming Material Controls

1. Revise labeling, signage, and access controls in material storage locations to support differentiation of accepted and nonconforming material and revise governing procedures accordingly.
2. Revise marking and tagging requirements of materials comprised of multiple parts to assure effective accountability and traceability.

March 8, 2011

Mr. Joseph L. Ernst, Executive Vice President
Shaw Modular Solutions
3191 W. Lincoln Rd.
Lake Charles, LA
70605

SUBJECT: SHAW MODULAR SOLUTIONS RESPONSE TO NRC LETTER DATED
JANUARY 24, 2011 (NUCLEAR REGULATORY COMMISSION INSPECTION
99901401/2011-201)

Dear Mr. Ernst:

Thank you for your February 22, 2011, letter in response to the U.S. Nuclear Regulatory Commission (NRC) request for information. The NRC conducted a vendor inspection on January 10 through January 12, 2011 at the Shaw Modular Solutions (SMS) facility in Lake Charles, LA. As stated in the NRC letter dated January 24, 2011, the NRC did not issue an inspection report based on the early inspection exit, but rather requested information on some of the technical and programmatic challenges that SMS is currently working to correct.

We have reviewed your letter and find that it is responsive to our request for information. We have no further questions or comments at this time and may review the implementation of your corrective actions during a future NRC staff inspection to determine whether full compliance has been achieved and maintained.

Please contact Ms. Kerri Kavanagh at (301) 415-3743 or via electronic mail at Kerri.Kavanagh@nrc.gov, if you have any questions or need assistance regarding this matter.

Sincerely,
/RA/

Juan D Peralta, Chief
Quality and Vendor Branch A
Division of Construction Inspection
& Operational Programs
Office of New Reactors

Docket No. 99901401

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Appendix F

NRC Press Release



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs

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No. 11-067

April 19, 2011

NRC, U.S. ARMY CORPS OF ENGINEERS ISSUE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR NEW REACTORS AT VIRGIL C. SUMMER SITE

The Nuclear Regulatory Commission and the U.S. Army Corps of Engineers (USACE), Charleston District, have completed the Final Environmental Impact Statement (FEIS) for the Combined Licenses (COL) for the proposed Summer Units 2 and 3 reactors. The NRC concludes in the FEIS that there are no environmental impacts that would preclude issuing the COLs for construction and operation of the proposed reactors at the site, near Jenkinsville, S.C. USACE will use the information in the FEIS in making its federal permit decision in accordance with the Clean Water Act and Rivers and Harbors Act of 1899.

The FEIS will be available on the NRC website at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1939/>. The NRC staff, in cooperation with USACE, began its environmental review with a scoping process that included public meetings near the site in January 2009. The staff issued a draft EIS for the proposed COLs in April 2010 and held public meetings in May 2010 to gather comments on the draft EIS.

The FEIS, with the NRC's conclusions, is also available via the NRC's electronic document database, ADAMS, by entering accession numbers ML11098A044 and ML11098A057 in the ADAMS search engine at: <http://wba.nrc.gov:8080/ves>. In addition, the Fairfield County Library, at 300 Washington St. in Winnsboro, S.C., will have a hardbound copy of the FEIS available for public inspection.

The NRC's publishing of the FEIS is only part of the overall Summer COL review. The agency staff continues to compile its final safety evaluation report (SER), which will include recommendations from the NRC's Advisory Committee on Reactor Safeguards, an independent group of nuclear safety experts. The NRC's final licensing decision will be based on the FEIS and SER findings, along with a ruling from the five-member Commission that heads the agency.

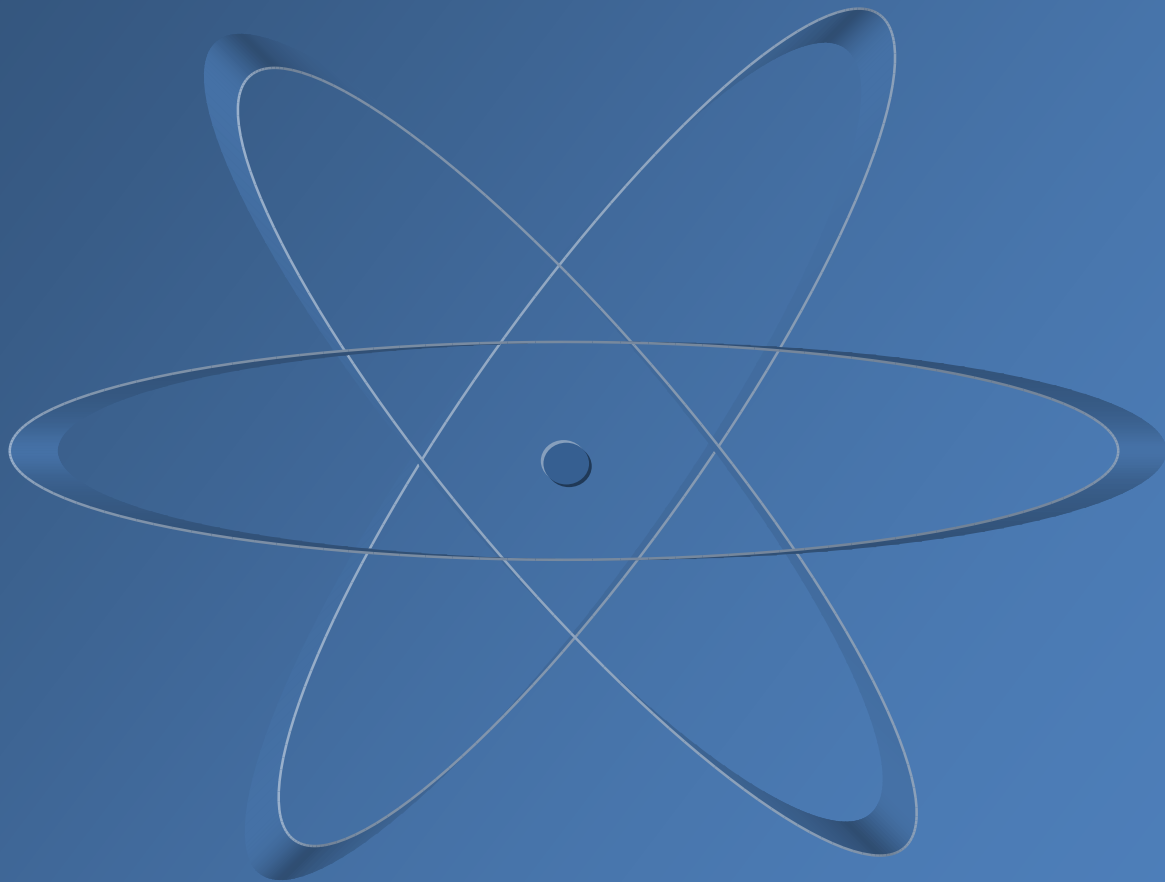
The applicants, South Carolina Electric & Gas (SCE&G) and Santee Cooper, are applying for licenses to build and operate two Westinghouse AP1000 reactors adjacent to the existing Summer nuclear power plant, approximately 26 miles northwest of Columbia, S.C. The companies submitted the application March 27, 2008, and supplemented the application's environmental report to support their request on Feb. 13, 2009, and July 2, 2010. The AP1000 is a 1,100 MWe pressurized-water reactor design the NRC certified in 2006. The agency is

currently reviewing Westinghouse's May 2007 application to amend the certified design. More information regarding the review is available on the NRC's website at:
<http://www.nrc.gov/reactors/new-reactors/design-cert/amended-ap1000.html>.

###

News releases are available through a free *listserv* subscription at the following Web address:
<http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

South Carolina Office of Regulatory Staff
Review of South Carolina Electric & Gas Company's
2011 1st Quarter Report on
V. C. Summer Units 2 and 3
Status of Construction



July 8, 2011



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Appendices

Appendix A: *Detailed Milestone Schedule as of March 31, 2011*

Appendix B: *Construction Site Pictures*

Appendix C: *ACRS Report on Aircraft Impact Assessment*

Appendix D: *ACRS Report on Safety Aspects of SCE&G's COL Application*

Appendix E: *SCE&G Letter to the Commission on Community Outreach Costs*

Appendix F: *NRC and WEC Correspondence Regarding Review of the AP1000*

Appendix G: *NRC Press Release Regarding the Completion of the FEIS*

Appendix H: *WEC Letter to the NRC Confirming Submission of DCD Rev. 19*

Introduction

On March 2, 2009, the Public Service Commission of South Carolina (“Commission”) approved South Carolina Electric & Gas Company’s (“SCE&G” or the “Company”) request for the construction of V.C. Summer Nuclear Station Units 2 and 3 (the “Units”) and the Engineering, Procurement and Construction (“EPC”) Contract. This approval can be found in the Base Load Review Order No. 2009-104(A) filed in Docket 2008-196-E. On January 21, 2010, the Commission approved the Company’s request to update milestones and capital cost schedules in Order No. 2010-12, which is filed in Docket No. 2009-293-E. Most recently, on May 16, 2011, the Commission approved SCE&G’s petition for revisions and updates to capital cost schedules in Order No. 2011-345, which is filed in Docket No. 2010-376-E.

The anticipated dependable capacity from the Units is approximately 2,234 MW, of which 55% (1,228 MW) will be available to serve SCE&G customers. South Carolina Public Service Authority (“Santee Cooper”) is expected to receive 45% (1,006 MW) of the electric output when the Units are in operation, and is paying 45% of the costs of the construction of the Units. The two companies continue to operate jointly to construct the Units under the terms established in their Bridge Agreement.

SCE&G has disclosed that Santee Cooper is reviewing its level of participation in constructing the Units. On March 21, 2011, Santee Cooper issued a press release announcing it signed a letter of intent to negotiate a power purchase agreement with the Orlando Utilities Commission (“OUC”). This press release states that Santee Cooper is negotiating the sale of 5 to 10 percent of the capacity and output from Santee Cooper’s ownership interest in the two new units. Based on this press release, the letter of intent also includes as part of the potential transaction an option for OUC’s future acquisition of a portion of Santee Cooper’s remaining ownership interest in the Units.

On May 16, 2011, SCE&G submitted its 2011 1st Quarter Report (“Report”) related to its construction of the Units. The Report is in Commission Docket No. 2008-196-E and covers the quarter ending March 31, 2011. The Report incorporates updated capital cost schedules per Commission Order No. 2011-345, which was also issued on May 16, 2011. Accordingly, ORS’s review of SCE&G Report reflects the updated capital cost schedules. This matter is discussed in further detail in the Section “Notable Activities Occurring after March 31, 2011.”

The Company's Report is submitted pursuant to S.C. Code Ann. § 58-33-277 (Supp. 2010) of the Base Load Review Act ("BLRA"), which requires the Report to include the following information:

1. Progress of construction of the plant;
2. Updated construction schedules;
3. Schedules of the capital costs incurred including updates to the information required by Section 58-33-270(B)(5);
4. Updated schedules of the anticipated capital costs; and
5. Other information as the Office of Regulatory Staff may require.

With reference to Section 58-33-275(A) of the BLRA, ORS's review of the Company's Report focuses on SCE&G's ability to adhere to (1) the approved construction schedule and (2) the approved capital cost schedules.

Approved Schedule Review

Milestone Schedule

As of March 31, 2011, ORS verified that of the Milestone Schedule's 146 activities:

- 59 milestone activities are complete
- 87 milestone activities are not completed (includes 5 delayed historical and 82 future milestones)

ORS also verified that during the 1st Quarter of 2011:

- Three (3) milestone activities were scheduled to be completed
 - Two (2) of these milestones have been completed
 - One (1) of these milestones is not complete

Per the Base Load Review Order, overall construction is considered to be on schedule if the substantial completion dates are not accelerated greater than 24 months or delayed greater than 18 months. As part of its review of the approved schedule, ORS identifies Caution Milestones. Caution Milestones are those that have been delayed ten (10) months or greater. If any Caution Milestone is delayed sixteen (16) months or greater, ORS may issue a formal notification to the Commission of the delay.

As of the end of the 1st Quarter of 2011, ORS identified two (2) Caution Milestones. Below is a status of these milestones:

- **Milestone Activity No. 79** – *Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment – Unit 2.*
Status: Delayed 10 months.

This activity was scheduled to be completed on June 30, 2010. Its revised target completion date is now April 30, 2011. Mangiarotti, located in Italy, is the manufacturer for several major components of the AP1000 reactor, including the passive residual heat removal heat exchanger. It was previously reported that Westinghouse Electric Company ("WEC") had identified quality assurance deficiencies during an audit of Mangiarotti related to its sub-suppliers. Past Stop Work Orders and failed sub-supplier qualifications are the major reasons for the delay.

The Company is monitoring the fabrication status at Mangiarotti to ensure related milestones remain within the specified contingency. However, SCE&G has identified a potential impact to the component delivery dates. WEC is working with Mangiarotti to improve the schedule.

- **Milestone Activity No. 80** – *Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing – Unit 2.*

Status: Delayed 12 months.

This activity was scheduled to be completed on January 31, 2011. The revised target completion date is January 31, 2012. The delay in this milestone activity is also associated with Mangiarotti. See the above discussion related to Milestone Activity No. 79.

SCE&G's Milestone Schedule attached to the Report indicates that overall construction is on schedule and does not identify any impact to Unit 2 and Unit 3's substantial completion dates of April 1, 2016 and January 1, 2019, respectively. However, the EPC Contract does not allow for any acceleration or delay in the substantial completion date. The Company states in its Report that the current construction plan will not allow Unit 2 to be completed by the EPC Contract substantial completion date of April 1, 2016.

ORS's review of the approved schedule and the EPC Contract confirms that the project remains on schedule given the schedule criteria established in the Base Load Review Order. ORS also confirms that a condition of the EPC Contract may not be met. That is, the substantial completion date of April 1, 2016 for Unit 2 – as set forth in the EPC Contract – will likely be delayed due to an expected delay in the issuance of the Combined License ("COL"). Change Order No. 11 discussed in the Section "Change Orders" sets forth the Company's actions to address this matter. Appendix A shows details of the Milestone Schedule as of March 31, 2011.

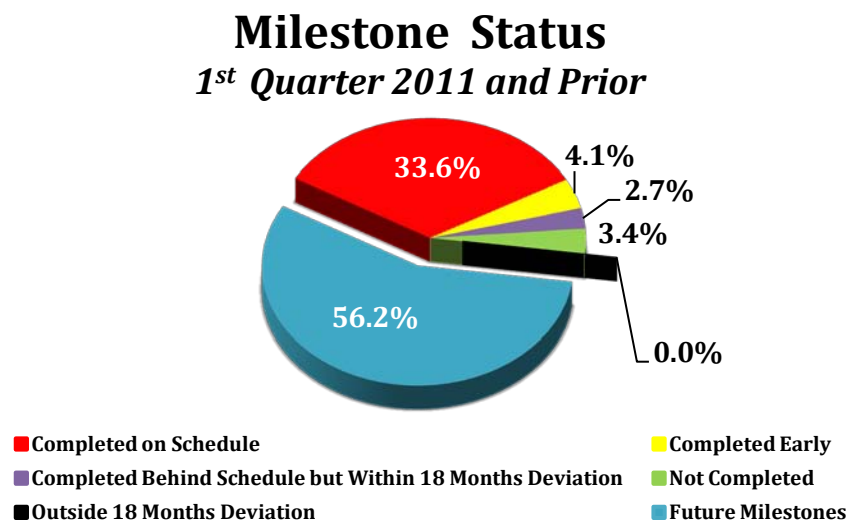
ORS reviews all invoices associated with the Milestone Schedule and during the 1st quarter 2011, there was one (1) invoice paid. This invoice relates to the completion of Milestone Activity Number 62, which is the purchase order being issued by the Polar Crane fabricator for the main hoist drum and wire rope for Units 2 & 3. ORS found that the invoice amount was consistent with the EPC payment schedule and determined that the escalation applied was consistent with the updated Handy Whitman inflation indices.

Table 1 shows the status of the 64 historical milestones and Chart 1 shows the status of all 146 milestones for the 1st quarter of 2011 and prior.¹

Table1:

| Historical Milestones <i>1st Quarter 2011 and Prior</i> 64 of 146 Total Milestones | | |
|---|------------------------|----------------------------|
| | # of Milestones | % of All Milestones |
| Completed on Schedule | 49 | 33.6% |
| Completed Early | 6 | 4.1% |
| Completed Behind Schedule but Within 18 Months Deviation | 4 | 2.7% |
| Not Completed | 5 | 3.4% |
| Outside 18 Months Deviation | 0 | 0.0% |
| Total Historical Milestones | 64 | 43.8% |

Chart 1:



¹ The numbers reported by ORS and SCE&G may vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed January 2, 2011 and the actual completion date is December 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being accomplished on schedule since it was completed within 30 days of the scheduled completion date.

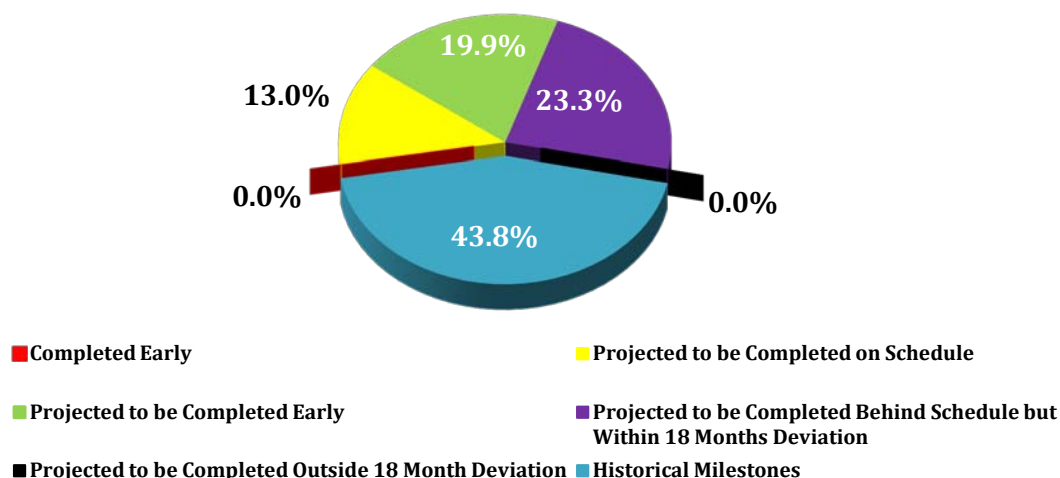
Table 2 shows the status of the 82 future milestones and Chart 2 shows the status of all 146 milestones for the 2nd quarter 2011 and beyond.²

Table 2:

| Future Milestones <i>2nd Quarter 2011 and Beyond</i> 82 of 146 Total Milestones | | |
|--|-----------------|---------------------|
| | # of Milestones | % of All Milestones |
| Completed Early | 0 | 0.0% |
| Projected to be Completed on Schedule | 19 | 13.0% |
| Projected to be Completed Early | 29 | 19.9% |
| Projected to be Completed Behind Schedule but Within 18 Months Deviation | 34 | 23.3% |
| Projected to be Outside 18 Month Deviation | 0 | 0.0% |
| Total Future Milestones | 82 | 56.2% |

Chart 2:

Milestone Status
2nd Quarter 2011 and Beyond



² The numbers reported by ORS and SCE&G may vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed January 2, 2011 and the actual completion date is December 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being accomplished on schedule since it was completed within 30 days of the scheduled completion date.

Specific Construction Activities

Site construction activities continue to progress. The construction workforce consists of approximately 900 contract personnel and 140 SCE&G personnel. Some major construction activities during the 1st quarter of 2011 are listed below:

- Progress on the Heavy Lift Derrick (“HLD”) continues. The foundation and rails were completed in March.
- The pre-construction work on the switchyard is approximately 81% complete.
- Unit 2 excavation is nearing completion. Unit 2 excavation is a critical path activity and ORS closely monitors all critical path activities.
- Unit 3 excavation began this quarter. Installation of the first 20 feet of the retaining wall was completed. This is another critical path activity.
- Approximately 118,000 cubic yards of material were removed from the Unit 3 Nuclear Island. Unit 3 excavation remains ahead of schedule.
- The second concrete batch plant was completed and non-safety concrete is being produced.
- Excavation for the first Cooling Tower foundation is complete.
- Piles are being driven for the first Cooling Tower 2A.
- Preparation for the mobilization of Chicago Bridge & Iron’s (“CB&I”) construction activities continues. CB&I has completed the Containment Vessel Bottom Head (“CVBH”) support structure.
- Construction of the Module Assembly Building (“MAB”) is complete. Installation of wiring for electrical power in the MAB continues.

Photographs of 1st quarter construction activities are shown in Appendix B.

Transmission

On February 28, 2011, SCE&G entered into a contract with Pike Electric for the permitting, engineering and design, procurement of material, and the construction of four 230 kV transmission lines associated with the Units. This project will consist of two phases.

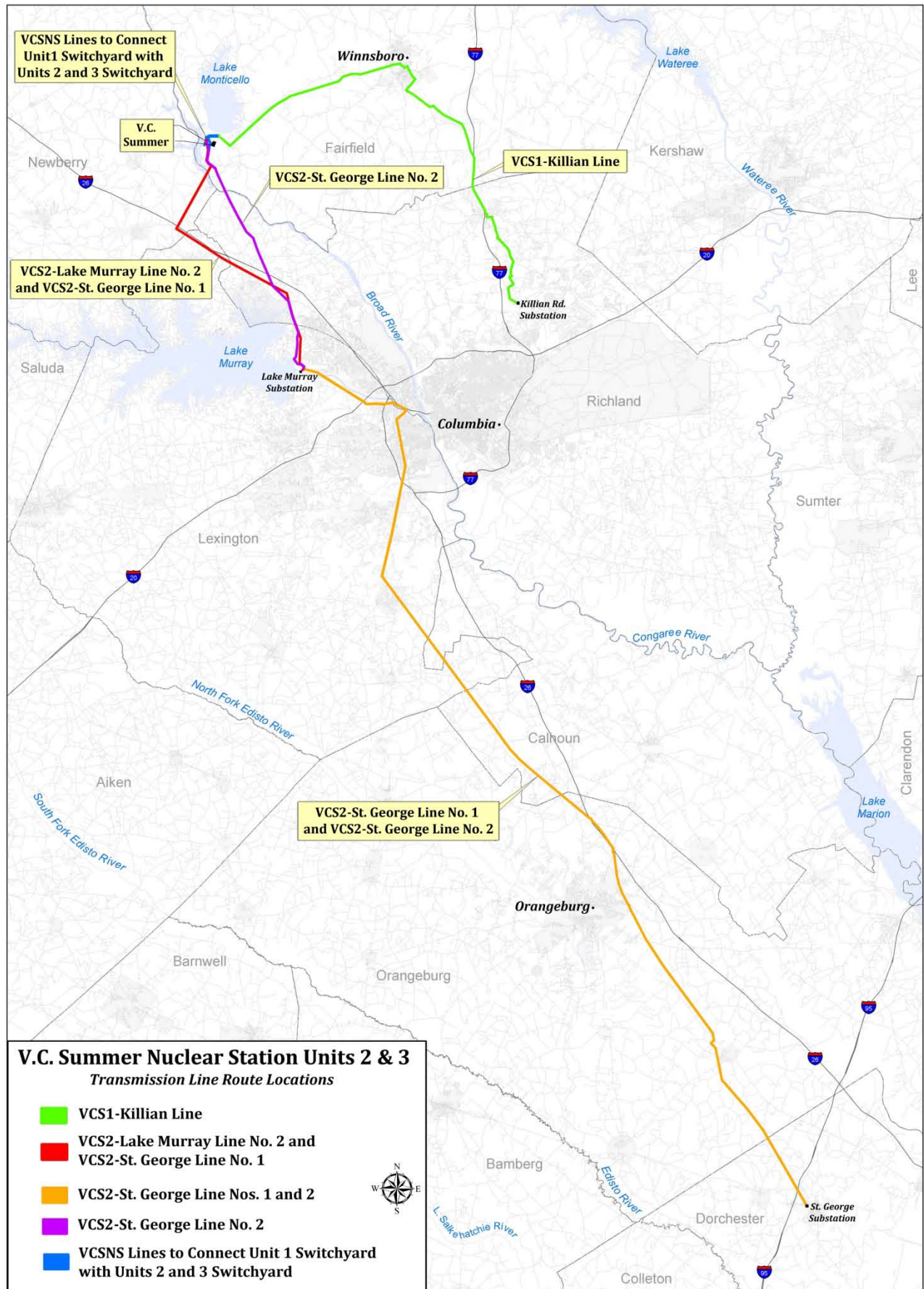
Phase 1 will construct two new 230 kV transmission lines in support of Unit 2: the VCS1–Killian Line and the VCS2–Lake Murray Line. The VCS1–Killian Line will connect the existing V.C. Summer Switchyard 1 to the Company’s existing Killian Road 230 kV Substation. The VCS2–Lake Murray Line will connect the newly constructed Switchyard (“Switchyard 2”) to the Company’s existing Lake Murray 230 kV Substation. Switchyard 2 will allow the connection of both the Unit 2 and Unit 3 generators to the grid. Also, two new 230 kV interconnections between Switchyard 1 and Switchyard 2 will be constructed.

Phase 2 will construct two new 230 kV transmission lines in support of Unit 3: VCS2–St. George Line #1 and VCS2–St. George Line #2. Both of these lines will connect Switchyard 2 to the yet-to-be constructed St. George Substation. Also, a third 230 kV interconnection between Switchyard 1 and Switchyard 2 will be constructed.

The four new transmission lines will occupy existing transmission right of way corridors except for approximately six miles of the VCS1–Killian Line corridor.

Map 1 shows the geographical location of the four transmission lines associated with the Units.

Map 1: New Transmission Lines Supporting V.C. Summer Units 2 & 3



Change Orders

During the 1st quarter of 2011, Change Order No. 8 was still under development. Change Order No. 11 was executed during the 1st quarter of 2011.

- **Change Order No. 8** – *Target to Firm/Fixed Shift*

On August 10, 2010, SCE&G entered into an agreement with WEC and Shaw. This agreement permits certain specific items of the EPC Contract that were originally included in the Target Price cost category to be moved to the Fixed Price or Firm Price cost categories.

Subsequent to the 1st quarter 2011, this Change Order was approved on April 29, 2011. This Change Order is discussed in more detail in the Section “Notable Activities Occurring After March 31, 2011.”

- **Change Order No. 11** – *COL Delay Study*

This Change Order was executed on February 28, 2011. WEC and Shaw will perform a study to evaluate the construction schedule impact of a probable delay in the receipt of the COL from the Nuclear Regulatory Commission (“NRC”).

The original study considered two scenarios. Scenario 1 would maintain the Unit 2 substantial completion date of April 1, 2016. Scenario 2 would delay the substantial completion date for Unit 2 from April 1, 2016 to October 1, 2016 (6 month delay). Under both scenarios the substantial completion date of Unit 3 would remain as scheduled for January 1, 2019.

SCE&G recently requested that the study consider a third scenario. Scenario 3 would delay the substantial completion date for Unit 2 from April 1, 2016 to October 1, 2016. The substantial completion of Unit 3 would then be accelerated from January 1, 2019 to February 1, 2018 (11 month acceleration). The Company believes that construction efficiencies can be created by narrowing the gap between the Units’ substantial completion dates. A draft report that includes the three scenarios discussed above has been provided to the Company by WEC and Shaw and is under review.

Table 3 below details the Change Orders and Amendments.

Table 3:

| Change Orders and Amendments | | | | | |
|------------------------------|---|--|------------------------|---------------|------------------|
| No. | Summary | Cost Categories Involved | Type of Change | Date Approved | Status |
| 1 | Operator training for WEC Reactor Vessel Systems and Simulator training | Fixed Price with 0% escalation ³ | Owner Directed | 7/22/2009 | Approved |
| 2 | Limited Scope Simulator | Firm Price | Owner Directed | 9/11/2009 | Approved |
| 3 | Repair of Parr Road | Time and Materials | Owner Directed | 1/21/2010 | Approved |
| 4 | Transfer of Erection of CA20 Module from WEC to Shaw | Target Price work shifting to Firm Price | Contractor Convenience | N/A | Superseded by #8 |
| 5 | <i>*Supplements Change Order #1*</i> Increased training by two weeks | Fixed Price with 0% escalation ³ | Owner Directed | 5/4/2010 | Approved |
| 6 | Hydraulic Nuts | Fixed Price | Owner Directed | 7/13/2010 | Approved |
| 7 | St. George Lines 1 & 2 | Firm and Target Price Categories | Entitlement | 7/13/2010 | Approved |
| 8 | Target to Firm/Fixed Shift ⁴ | Target, Firm and Fixed Price Categories | Owner Directed | 4/29/2011 | Approved |
| 9 | Switchyard Lines Reconfiguration | Firm and Target Price Categories | Owner Directed | 11/30/10 | Approved |
| 10 | Primavera | Fixed Price with 0% escalation | Owner Directed | 12/16/10 | Approved |
| 11 | COL Delay Study | Fixed Price, but would be applied to T&M Work Allowances | Owner Directed | 2/28/11 | Approved |

| | | |
|---------------------|--|----------------------|
| Amendment #1 | Includes Change Orders 1 and 2 | Executed on 8/2/2010 |
| Amendment #2 | Will incorporate Change Orders 3, 5-11 | Under Development |

³ Fixed Price with 0% escalation, but would be applied to Time and Materials Work Allowances by adding a new category for Simulator Instructor training and reducing Startup Support by commensurate amount.

⁴ This Change Order was approved in the 2nd Quarter of 2011.

Federal Licensing Activities

The NRC issued a Revised Review Schedule to SCE&G on October 29, 2010. The revised NRC schedule targets issuance of the final safety evaluation report in June 2011. Based on ORS's monitoring of licensing activities at the federal level, ORS finds a target date of July 2011 to be more appropriate.

On January 19, 2011, the Advisory Committee on Reactor Safeguards ("ACRS") issued a report on the safety aspects of the Aircraft Impact assessment of the AP1000. In their report to the Chairman of the NRC, the ACRS states, "analyses show that the containment remains intact following the impact of a large commercial aircraft. The reactor core remains cooled, and spent fuel pool integrity is maintained." A copy of this report is attached as Appendix C.

On February 17, 2011, the ACRS issued a report on the safety aspects of SCE&G's combined license application. In the ACRS's letter to NRC Chairman Jaczko, the ACRS concluded that there is reasonable assurance that the Units can be built and operated without undue risk to the health and safety of the public. A copy of this report is attached as Appendix D.

On February 24, 2011, the NRC issued a Notice of Proposed Rulemaking ("NOPR") to amend its regulations to certify an amendment to the AP1000 standard plant design. The NOPR was published in Vol. 76, No. 37 of the Federal Register. The purpose of the amendment is to replace the COL information items and design acceptance criteria with specific design information, address the effects of the impact of a large commercial aircraft, incorporate design improvements, and increase standardization of the design. Comments on this amendment were due by May 10, 2011.

On April 19, 2011 the NRC and U.S. Army Corps of Engineers ("USACE") issued the Final Environmental Impact Statement ("FEIS") for the Units stating that there are no environmental impacts that would prevent issuing the COL for construction and operation of the Units. The FEIS is described in more detail in the Section "Notable Activities Occurring After March 31, 2011."

Based on ORS's monitoring of the federal licensing activities, Table 4 below provides the most current dates for the review of SCE&G's COL.

Table 4:

| Review Schedule for SCE&G's Combined License Application | | |
|--|--|--------------------------------|
| Key Milestones | | Completion Date |
| Application | | |
| Application Submitted | | Completed – 03/27/2008 |
| Safety Review | | |
| Phase A | Requests for Additional Information (“RAIs”) and Supplemental RAIs | Completed – 09/10/2009 |
| Phase B | Advanced Final Safety Evaluation Report (“SER”) without Open Items | Completed – 12/10/2010 |
| Phase C | ACRS Review of Advanced Final SER | Completed – 03/26/2011 |
| Phase D | Final SER Issued | Target – July 2011 |
| Environmental Review | | |
| Phase 1 | Environmental Impact Statement scoping report issued | Completed – 07/15/2009 |
| Phase 2 | Draft Environmental Impact Statement (“DEIS”) | Completed – 04/16/2010 |
| Phase 3 | Response to Public Comments on DEIS | Completed – August 2010 |
| Phase 4 | Final Environmental Impact Statement | Completed – 04/15/2011 |
| Hearing | | |
| NRC holds Mandatory hearing | | Target – September 2011 |
| License | | |
| NRC Rulemaking Decision | | Target – October 2011 |
| NRC Issuance of Combined License | | Target – December 2011 |

Approved Budget Review

As reported in ORS's 3rd Quarter 2010 Review, the South Carolina Supreme Court ruled on August 9, 2010 that SCE&G may not recover "contingency costs" under the BLRA. S.C. Energy Users Comm. vs. South Carolina Pub. Serv. Comm'n, 388 S.C. 486, 697 S.E.2d 587 (2010). Previously, contingency costs had been approved as a capital cost category by the Commission in Order No. 2009-104(A), as modified by Order No. 2010-12. The Supreme Court's ruling removed all contingency costs totaling \$438.293 million from the budget for the Units, thereby reducing the overall approved budget. That is, the total approved SCE&G project commitment (in 2007 dollars) was reduced from \$4.534 billion to \$4.096 billion.

As a result of the August 9, 2010 Supreme Court Ruling, on November 15, 2010, the Company filed, concurrently with its 2010 3rd Quarter report, a request with the Commission in Docket No. 2010-376-E (the "Filing") to include approximately \$174 million in capital costs which would have been deducted from the Company's \$438.293 million (in 2007 dollars) budget for contingency costs. The Filing updates the gross construction cost – which includes escalation and Allowance for Funds Used During Construction ("AFUDC") – of the project to show a decrease from \$6.188 billion⁵ to \$5.787 billion, which is an overall reduction of approximately \$400 million in the total cost to construct the Units. A hearing was held on this matter on April 4, 2011. The Commission approved the Filing on May 16, 2011 in Order No. 2011-345.

The Company's Report, which was also issued on May 16, 2011, incorporates updated capital cost schedules per the Commission Order No. 2011-345. Accordingly, ORS's review of SCE&G's Report reflects the updated capital cost schedules. The Filing is discussed in further detail in the Section "Notable Activities Occurring after March 31, 2011."

ORS's budget review includes an analysis of the 1st quarter 2011 capital costs, project cash flow, escalation and AFUDC.

⁵ \$6.188 billion reflects the removal of the contingency dollars. The gross construction costs per Commission Order No. 2010-12 is \$6.875 billion.

Capital Costs

To determine how consistently the Company adheres to the budget approved by the Commission in Order No. 2011-345, ORS evaluates nine (9) major cost categories for variances. These cost categories are:

- Fixed with No Adjustment
- Firm with Fixed Adjustment A
- Firm with Fixed Adjustment B
- Firm with Indexed Adjustment
- Actual Craft Wages
- Non-Labor Cost
- Time & Materials
- Owners Costs
- Transmission Projects

ORS monitors variances due to project changes (e.g., shifts in work scopes, payment timetables, construction schedule adjustments, change orders). At the end of the 1st quarter of 2011, the total base project cost (in 2007 dollars) is \$4.270 billion. The Report shows the total base project cost has decreased by approximately \$103,000. This reduction reflects a decision by the Company that it would not seek recovery for \$103,000 in Community/Support Outreach costs that WEC and Shaw have included in costs to be charged under the EPC Contract. This was communicated in a letter to the Commission dated April 25, 2011 under Docket No. 2010-376-E. The letter is attached to this report as Appendix E.

Project Cash Flow

As shown in Appendix 2 Chart A of the Company's Report, the cumulative amount spent on the project as of December 31, 2010 is \$861.183 million. The cumulative forecasted amount to be spent on the project by December 31, 2011 is \$1.324 billion.

In its Report, the Company compares its current project cash flow to the cash flow schedule approved by the Commission in Order No. 2011-345. To produce a common basis for the comparison, SCE&G adjusts the approved cash flow schedule to reflect the current escalation rates. As of March 31, 2011, the comparison shows the yearly maximum annual variance above and below the approved cash flow schedule through the life of the project. The comparison also shows the cumulative project cash flow is forecasted to be approximately

\$18.964 million under budget at the end of 2011. At the end of the project in 2018, the cumulative project cash flow is forecasted to be approximately \$8.903 million over budget.

Table 5 shows the annual and cumulative project cash flows as compared to those approved in Order No. 2011-345.

Table 5:

| Project Cash Flow Comparison <i>\$'s in Thousands ⁶</i> | | | |
|--|-------------|------------------------|----------------------------|
| | | Annual Over/(Under) | Cumulative Over/(Under) |
| Actual ⁷ | 2007 | - | - |
| | 2008 | \$0 | \$0 |
| | 2009 | \$0 | \$0 |
| | 2010 | \$0 | \$0 |
| Projected | 2011 | (\$18,964) | (\$18,964) |
| | 2012 | \$15,082 | (\$3,882) |
| | 2013 | \$15,687 | \$11,805 |
| | 2014 | (\$10,296) | \$1,510 |
| | 2015 | \$3,064 | \$4,573 |
| | 2016 | \$4,382 | \$8,955 |
| | 2017 | (\$314) | \$8,641 |
| | 2018 | \$262 | \$8,903 |

In summary, the Report shows a decrease in the total base project cost of approximately \$103,000 (in 2007 dollars). It also shows an additional project cash flow requirement of approximately \$8.903 million necessary to complete the project in 2018. These forecasts reflect the updated capital cost schedules approved in Order No. 2011-345.

⁶ There will be slight variances in these numbers due to rounding.

⁷ The actual comparison amounts equate to zero in accordance with the updated capital cost schedules approved in Order No. 2011-345

AFUDC and Escalation

The forecasted AFUDC for the total project as of the end of the 1st quarter of 2011 is \$246.515 million and is based on a forecasted 5.87% AFUDC rate. This is a decrease of approximately \$9.169 million from the Company's 2010 4th Quarter Report.

As previously reported by ORS in its reviews of SCE&G's Quarterly Reports, the decline in the five-year average escalation rates reduce the projected project cash flow. Current worldwide economic conditions continue to reduce the projected escalation cost of the project. Primarily due to the decrease in escalation rates, the overall project is considered under budget. More specifically, as of March 31, 2011, the forecasted gross construction cost of the plant is \$5.624 billion as compared to the approved gross construction cost of \$5.787 billion, which reflects a decrease of approximately \$163.408 million.

Additional ORS Monitoring Activities

ORS continually performs the following activities as well as other monitoring activities as deemed necessary.

- Audits capital cost expenditures and resulting AFUDC in Construction Work in Progress ("CWIP")
- Physically observes construction activities
- Performs bi-monthly on-site review of construction documents
- Holds monthly update meetings with SCE&G
- Meets quarterly with representatives of WEC
- Participates in NRC Public Meetings regarding SCE&G Combined License Application

Notable Activities Occurring after March 31, 2011

The BLRA allows SCE&G 45 days from the end of the current quarter to file its Report. Items of importance that occurred subsequent to the closing of the 1st quarter 2011 are reported below.

Updates and Revisions to Capital Cost Schedules

On April 4, 2011 a hearing was held at the Commission on SCE&G's petition for updates and revisions to the capital costs schedule for the construction of the Units in Docket No. 2010-376-E. In support of the Filing, the Company presented the testimony of the President of SCANA Corporation and SCE&G, Chief Operating Officer and Executive Vice President for Generation and Transmission of SCE&G, and the Vice President for Nuclear Finance Administration of SCE&G. ORS presented testimony from its Electric Department and its nuclear industry consultant.

In the Filing, the Company requested to increase project capital costs by approximately \$174 million. This increase consisted of capital costs related to the construction of the Units that SCE&G identified and itemized to specific cost categories. A Settlement Agreement was reached between ORS and SCE&G and filed with the Commission on March 28, 2011. As part of the Settlement Agreement, ORS and SCE&G agreed that the budget revisions were due to SCE&G refining and updating its cost projections and to change orders negotiated by SCE&G with WEC/Shaw. Subsequent to the 1st quarter 2011, the Settlement Agreement was approved in Order No. 2011-345.

Change Order No. 8

Change Order No. 8 was signed and approved on April 29, 2011. As mentioned in previous ORS reviews of the Company's Quarterly Reports, SCE&G negotiated with Shaw to use a single, large Bigge Crane as opposed to two smaller cranes contemplated in the EPC Contract. Change Order No. 8 resolves this matter.

Change Order No. 8 also shifts approximately \$315 million in project costs associated with 11 scopes of work in the EPC Contract from the Target Price cost category to the Fixed Price or Firm Price cost categories. These shifts do not impact the total price in the EPC Contract. However, Change Order No. 8 includes a risk compensation payment of approximately \$10 million.

The shifts and the risk compensation payment associated with Change Order No. 8 were included in the Company's Filing as well as the Settlement Agreement approved in Order No. 2011-345.

Table 6 provides a description of the scopes of work that were shifted from Target to Fixed or Firm cost categories in Change Order No. 8:

Table 6:

| Change Order No. 8 | |
|---|--|
| Shaw Work Scope Description | |
| Site Design Engineering Group Labor, Labor Burdens and Overhead Recovery | |
| Living Allowances & Relocations for all Field Non-Manual Personnel <i>Excludes Business Travel Expenses. Excludes Start-Up Support</i> | |
| Construction Equipment <i>Includes maintenance labor, parts and supplies</i> | |
| Heavy Lift Derrick <i>Excludes Shaw Assembly Labor, Operators, Fuel, Foundation Labor and Subcontractors</i> | |
| Switchyard <i>Excludes Grading and Shaw Labor</i> | |
| Office equipment and supplies | |
| Cooling Towers | |
| Module Assembly Building <i>Target cost of slabs is the only item transferred</i> | |
| On-Site Assembly of Structural Modules CA01-05 and CA20 | |
| Safety Program | |
| Advertising and Public Relations | |
| Total Cost Shifted from Target to Fixed/Firm: ≈ \$315 Million | |

Shaw Modular Solutions

In its review of SCE&G's 4th Quarter Report of 2010, ORS discussed deficiencies related to Shaw Modular Solutions' ("SMS") quality assurance programs which resulted in a manufacturing hold on all fabrication or rework activities. As of this review, SCE&G reports that WEC and Shaw have increased its quality assurance oversight and presence at the SMS facility in Lake Charles, LA. Also, SMS has implemented programs to improve its quality control practices and procedures.

As of the end of April 2011, the Company reports that SMS is making progress in implementing its action plans to improve its quality assurance programs. SMS has been released to start the fabrication of floor submodules. SCE&G anticipates receiving an updated module fabrication and delivery schedule that incorporates the impact of the manufacturing holds. The updated schedule is a key factor in determining any impact to the substantial completion dates. ORS will continue to monitor and report on SMS.

Annual Request for Revised Rates

Pursuant to the BLRA, SCE&G may request revised rates no earlier than one year after the request of a Base Load Review Order or any prior revised rates request. SCE&G filed its Annual Request for Revised Rates ("Request") with the Commission on May 27, 2011 in Docket No. 2011-207-E with the effective date of May 30, 2011, the anniversary date of SCE&G's previous request for revised rates. The Request sets forth an increase in retail rates totaling \$58,537,000.

SCE&G may file with the Commission annual requests for revised rates as long as the project is being constructed in accordance with the construction schedules and cumulative cost forecasts as approved by the Commission. Pursuant to the BLRA, until a nuclear plant enters commercial operation, the rate adjustments related to the plant include only recovery of the weighted average cost of capital applied to the outstanding balance of CWIP and shall not include depreciation or other items constituting a return of capital to the utility.

Table 7 below shows the requested increases and approved increases from all prior Revised Rate Filings with the Commission.

Table 7:

| Requested vs. Approved Increases <i>SCE&G Revised Rate Filings</i> | | | | | |
|--|------------------|---------------------------|------------------------|--------------------------|------------------------|
| Docket No. | Order No. | Requested Increase | ORS Examination | Approved Increase | Retail Increase |
| 2008-196-E | 2009-104(A) | \$8,986,000 | (\$1,183,509) | \$7,802,491 | 0.43% |
| 2009-211-E | 2009-696 | \$22,533,000 | \$0 | \$22,533,000 | 1.10% |
| 2010-157-E | 2010-625 | \$54,561,000 | (\$7,260,000) | \$47,301,000 | 2.31% |
| 2011-207-E | TBD ⁸ | \$58,537,000 | TBD | TBD | TBD |

NRC and WEC Correspondence

On May 20, 2011, NRC Chairman Jaczko issued a statement to confirm that the NRC's review of WEC's amended AP1000 reactor design resulted in the uncovering of additional technical issues. Chairman Jaczko states, "WEC must resolve the issues before we can consider finalizing NRC certification of the design." Technical analysis has led to more questions regarding the AP1000's shield building. Chairman Jaczko's statement is attached as Appendix F.

On May 26, 2011, WEC issued a press release to respond to Chairman Jaczko's statement. WEC indicated that recent NRC statements regarding the discovery of new issues relating to the approval of the design amendments for the AP1000 units are being "misinterpreted and sensationalized." WEC said that Chairman Jaczko's statements "do not reflect Westinghouse's transparent and cooperative approach to handling of the discovery and severity of the few remaining issues that need to be resolved before receiving approval from the NRC." This WEC news article is attached to the report as Appendix F.

On May 31, 2011, Chairman Jaczko issued another statement emphasizing the NRC's commitment to safety. Chairman Jaczko specifically mentions its staff's actions to resolve a significant design concern the NRC identified with the Westinghouse AP1000 reactor design. Chairman Jaczko's statement is attached as Appendix F.

⁸ The Request in Docket No. 2011-207-E was filed in May 2011 and an Order has not been issued.

Environmental Review

In April 2011, the NRC and the USACE completed the FEIS for the Units, which concludes the review of environmental impacts of the project. As stated in the FEIS, the NRC concludes that there are no environmental impacts that would preclude issuing the COL. The Company states that the April 2011 approval of the FEIS supports the issuance of a COL for the Units in late 2011 or early 2012. On April 19, 2011, the NRC issued a press release regarding the FEIS and this is attached as Appendix G.

Design Control Document Revision 19

The Company's Report states that WEC was expected to provide the NRC with Design Control Document ("DCD") Revision 19 in the 1st quarter of 2011. However, due to unresolved issues, the NRC Staff had not completed its review by the 1st quarter of 2011. As a result, DCD Revision 19 was submitted to the NRC on June 13, 2011. WEC's letter to the NRC confirming the submission of this revision is attached as Appendix H. The delay of the DCD Revision 19 submittal is expected to impact the final rulemaking schedule, but to what extent is yet to be determined. SCE&G stated it anticipates NRC approval of the amended DCD in the second half of 2011. This delay in the DCD approval supports issuance of a COL for the Units in late 2011 or early 2012. ORS continues to closely monitor the NRC Schedule for DCD approval.

SCE&G's 2011 2nd Quarter Report is due 45 days after June 30, 2011. ORS expects to continue publishing a review evaluating SCE&G's quarterly reports.

Appendix A

Detailed Milestone Schedule as of March 31, 2011

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
Be Completed
Q2-11ORS Caution
Milestone

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 1 | Approve Engineering, Procurement and Construction Agreement | 5/23/2008 | | No | No | 5/23/2008 | |
| 2 | Issue Purchase Orders ("P.O.") to Nuclear Component Fabricators for Units 2 and 3 Containment Vessels | 12/3/2008 | | No | No | 12/3/2008 | |
| 3 | Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator – First Payment - Unit 2 | 8/31/2008 | | No | No | 8/18/2008 | |
| 4 | Contractor Issue P.O. to Accumulator Tank Fabricator – Unit 2 | 7/31/2008 | | No | No | 7/31/2008 | |
| 5 | Contractor Issue P.O. to Core Makeup Tank Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |
| 6 | Contractor Issue P.O. to Squib Valve Fabricator- Units 2 & 3 | 3/31/2009 | | No | No | 3/31/2009 | |
| 7 | Contractor Issue P.O. to Steam Generator Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 8 | Contractor Issue Long Lead Material P.O. to Reactor Coolant Pump Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 9 | Contractor Issue P.O. to Pressurizer Fabricator - Units 2 & 3 | 8/31/2008 | | No | No | 8/18/2008 | |
| 10 | Contractor Issue P.O. to Reactor Coolant Loop Pipe Fabricator - First Payment- Units 2 & 3 | 6/30/2008 | | No | No | 6/20/2008 | |

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
Be Completed
Q2-11ORS Caution
Milestone

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 11 | Reactor Vessel Internals – Issue Long Lead Material P.O. to Fabricator Units 2 & 3 | 11/21/2008 | | No | No | 11/21/2008 | |
| 12 | Contractor Issue Long Lead Material - P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 13 | Contractor Issue P.O. to Integrated Head Package Fabricator - Units 2 & 3 | 7/31/2009 | | No | No | 7/31/2009 | |
| 14 | Control Rod Drive Mechanism – Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 - First Payment | 6/21/2008 | | No | No | 6/21/2008 | |
| 15 | Issue P.O.s to Nuclear Component Fabricators for Nuclear Island Structural CA20 Modules | 7/31/2009 | | No | No | 8/28/2009 | |
| 16 | Start Site Specific and Balance of Plant Detailed Design | 9/11/2007 | | No | No | 9/11/2007 | |
| 17 | Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 18 | Steam Generator - Issue Final P.O. to Fabricator for Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 19 | Reactor Vessel Internals - Contractor Issue P.O. for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3 | 1/31/2010 | | No | No | 1/29/2010 | |
| 20 | Contractor Issue Final P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
Be Completed
Q2-11ORS Caution
Milestone

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 21 | Variable Frequency Drive Fabricator Issue Transformer P.O. - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 22 | Start Clearing, Grubbing and Grading | 1/26/2009 | | No | No | 1/26/2009 | |
| 23 | Core Makeup Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 24 | Accumulator Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 25 | Pressurizer Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 26 | Reactor Coolant Loop Pipe - Contractor Issue P.O. to Fabricator - Second Payment - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 27 | Integrated Head Package - Issue P.O. to Fabricator - Units 2 & 3 - Second Payment | 7/31/2009 | | No | No | 7/31/2009 | |
| 28 | Control Rod Drive Mechanism - Contractor Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 29 | Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator - Second Payment - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 30 | Start Parr Road Intersection Work | 2/13/2009 | | No | No | 2/13/2009 | |

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
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Q2-11ORS Caution
Milestone

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|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 31 | Reactor Coolant Pump - Issue Final P.O. to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 32 | Integrated Heat Packages Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2009 | | No | No | 10/1/2009 | 1 Month Early |
| 33 | Design Finalization Payment 3 | 1/31/2009 | | No | No | 1/30/2009 | |
| 34 | Start Site Development | 6/23/2008 | | No | No | 6/23/2008 | |
| 35 | Contractor Issue P.O. to Turbine Generator Fabricator - Units 2 & 3 | 2/28/2009 | | No | No | 2/19/2009 | |
| 36 | Contractor Issue P.O. to Main Transformers Fabricator - Units 2 & 3 | 9/30/2009 | | No | No | 9/25/2009 | |
| 37 | Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3 | 11/30/2010 | | No | No | 12/30/2010 | Delayed 1 Month |
| 38 | Design Finalization Payment 4 | 4/30/2009 | | No | No | 4/30/2009 | |
| 39 | Turbine Generator Fabricator Issue P.O. for Condenser Material - Unit 2 | 8/31/2009 | | No | No | 8/28/2009 | |
| 40 | Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
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Q2-11ORS Caution
Milestone

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 41 | Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3 | 5/31/2010 | | No | No | 5/27/2010 | |
| 42 | Design Finalization Payment 5 | 7/31/2009 | | No | No | 7/31/2009 | |
| 43 | Start Erection of Construction Buildings Including Craft Facilities for Personnel, Tools, Equipment; First Aid Facilities; Field Offices for Site Management and Support Personnel; Temporary Warehouses; and Construction Hiring Office | 10/9/2009 | | No | No | 12/18/2009 | Delayed 2 Months |
| 44 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2 | 7/31/2009 | | No | No | 8/28/2009 | |
| 45 | Design Finalization Payment 6 | 10/31/2009 | | No | No | 10/7/2009 | |
| 46 | Instrumentation and Control Simulator - Contractor Issue P.O. to Subcontractor for Radiation Monitor System - Units 2 & 3 | 12/31/2009 | | No | No | 12/17/2009 | |
| 47 | Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 6/30/2011 | No | No | | |
| 48 | Turbine Generator Fabricator Issue P.O. for Moisture Separator Reheater/Feedwater Heater Material Unit 2 | 4/30/2010 | | No | No | 4/30/2010 | |
| 49 | Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2 | 4/30/2010 | | No | No | 2/18/2010 | 2 Months Early |

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
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Q2-11ORS Caution
Milestone

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 50 | Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2 | 10/31/2011 | 2/28/2012 | No | No | | Delayed 4 Months |
| 51 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2 | 6/30/2009 | | No | No | 6/30/2009 | |
| 52 | Contractor Notified That Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2 | 11/30/2010 | | No | No | 12/23/2010 | |
| 53 | Start Excavation and Foundation Work for the Standard Plant for Unit 2 | 3/15/2010 | | No | No | 3/15/2010 | |
| 54 | Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2 | 2/28/2010 | | No | No | 4/30/2010 | Delayed 2 Months |
| 55 | Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2 | 2/28/2010 | | No | No | 12/30/2010 | Delayed 10 Months |
| 56 | Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2 | 5/31/2010 | | No | No | 5/17/2010 | |
| 57 | Complete Preparations for Receiving the First Module On Site for Unit 2 | 8/18/2010 | | No | No | 1/22/2010 | 7 Months Early |
| 58 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2 | 4/30/2010 | | No | No | 4/21/2010 | |
| 59 | Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2 | 11/30/2010 | | No | No | 11/16/2010 | |

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
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Q2-11ORS Caution
Milestone

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|-----------------------------------|
| 60 | Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2 | 12/31/2010 | 5/31/2011 | No | No | | Delayed 5 Months |
| 61 | Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2 | 5/31/2011 | 12/31/2011 | No | No | | Delayed 7 Months |
| 62 | Polar Crane Fabricator Issue P.O. for Main Hoist Drum and Wire Rope - Units 2 & 3 | 2/28/2011 | | No | No | 2/1/2011 | Completed |
| 63 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3 | 6/30/2011 | 6/30/2011 | No | No | | |
| 64 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2 | 10/31/2011 | 1/31/2012 | No | No | | Delayed 3 Months |
| 65 | Start Placement of Mud Mat for Unit 2 | 7/14/2011 | 10/28/2011 | No | No | | Delayed 3 Months |
| 66 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2 | 1/31/2011 | | No | No | 9/28/2010 | Completed - 4 Months Early |
| 67 | Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2 | 10/31/2010 | 5/31/2011 | No | No | | Delayed 7 Months |
| 68 | Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3 | 2/28/2012 | 2/28/2012 | No | No | | |

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Milestones Not
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QuarterScheduled to
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Milestone

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 69 | Begin Unit 2 First Nuclear Concrete Placement | 10/3/2011 | 10/20/2011 | No | No | | |
| 70 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2 | 9/30/2011 | 11/30/2011 | No | No | | Delayed 2 Months |
| 71 | Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 6/30/2011 | No | No | | |
| 72 | Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2 | 5/31/2011 | 9/30/2011 | No | No | | Delayed 4 Months |
| 73 | Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2 | 12/31/2012 | 12/31/2012 | No | No | | |
| 74 | Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2 | 12/31/2011 | 4/30/2012 | No | No | | Delayed 4 Months |
| 75 | Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2 | 10/31/2010 | 6/30/2011 | No | No | | Delayed 8 Months |
| 76 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2 | 6/30/2011 | 10/31/2011 | No | No | | Delayed 4 Months |
| 77 | Design Finalization Payment 14 | 10/31/2011 | 10/31/2011 | No | No | | |

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Milestones Not
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Prior to Q1-11Current
QuarterScheduled to
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Milestone

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 78 | Set Module CA04 For Unit 2 | 1/27/2012 | 5/17/2012 | No | No | | Delayed 3 Months |
| 79 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2 | 6/30/2010 | 4/30/2011 | No | No | | Delayed 10 Months |
| 80 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2 | 1/31/2011 | 1/31/2012 | No | No | | Delayed 12 Months |
| 81 | Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2 | 2/28/2012 | 7/31/2012 | No | No | | Delayed 5 Months |
| 82 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3 | 8/31/2013 | 7/31/2013 | No | No | | 1 Month Early |
| 83 | Set Containment Vessel Ring #1 for Unit 2 | 4/3/2012 | 10/12/2012 | No | No | | Delayed 6 Months |
| 84 | Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2 | 3/31/2012 | 12/31/2011 | No | No | | 3 Months Early |
| 85 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3 | 8/31/2013 | 1/31/2013 | No | No | | 7 Months Early |
| 86 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3 | 9/30/2012 | 5/31/2012 | No | No | | 4 Months Early |

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 87 | Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3 | 1/31/2013 | 10/31/2011 | No | No | | 15 Months Early |
| 88 | Set Nuclear Island Structural Module CA03 for Unit 2 | 8/30/2012 | 2/28/2013 | No | No | | Delayed 6 Months |
| 89 | Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2 | 5/31/2012 | 5/31/2012 | No | No | | |
| 90 | Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 12/31/2012 | 11/30/2012 | No | No | | 1 Month Early |
| 91 | Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2 | 7/31/2012 | 6/30/2012 | No | No | | 1 Month Early |
| 92 | Start Containment Large Bore Pipe Supports for Unit 2 | 4/9/2012 | 8/31/2012 | No | No | | Delayed 4 Months |
| 93 | Integrated Head Package - Shipment of Equipment to Site - Unit 2 | 10/31/2012 | 2/28/2013 | No | No | | Delayed 4 Months |
| 94 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2 | 11/30/2012 | 11/30/2012 | No | No | | |
| 95 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3 | 5/31/2013 | 4/30/2013 | No | No | | 1 Month Early |

Key:

Milestones Not
CompletedCompleted
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Milestone

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|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 96 | Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2 | 5/31/2012 | 7/31/2012 | No | No | | Delayed 2 Months |
| 97 | Start Concrete Fill of Nuclear Island Structural Modules CA01 and CA02 for Unit 2 | 2/26/2013 | 8/30/2013 | No | No | | Delayed 6 Months |
| 98 | Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2 | 4/30/2012 | 4/30/2012 | No | No | | |
| 99 | Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2 | 2/28/2013 | 9/30/2012 | No | No | | 5 Months Early |
| 100 | Deliver Reactor Vessel Internals to Port of Export - Unit 2 | 7/31/2013 | 11/30/2013 | No | No | | Delayed 4 Months |
| 101 | Set Unit 2 Containment Vessel #3 | 4/17/2013 | 10/17/2013 | No | No | | Delayed 6 Months |
| 102 | Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2 | 3/31/2013 | 1/31/2013 | No | No | | 2 Months Early |
| 103 | Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2 | 4/30/2013 | 3/31/2013 | No | No | | 1 Month Early |
| 104 | Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 2/28/2014 | 9/30/2013 | No | No | | 5 Months Early |

Key:

Milestones Not
CompletedCompleted
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|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 105 | Polar Crane - Shipment of Equipment to Site - Unit 2 | 5/31/2013 | 11/30/2013 | No | No | | Delayed 6 Months |
| 106 | Receive Unit 2 Reactor Vessel On Site From Fabricator | 5/20/2013 | 11/21/2013 | No | No | | Delayed 6 Months |
| 107 | Set Unit 2 Reactor Vessel | 6/18/2013 | 12/19/2013 | No | No | | Delayed 6 Months |
| 108 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3 | 12/31/2013 | 11/30/2013 | No | No | | 1 Month Early |
| 109 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3 | 8/31/2014 | 4/30/2014 | No | No | | 4 Months Early |
| 110 | Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2 | 9/30/2013 | 8/31/2013 | No | No | | 1 Month Early |
| 111 | Place First Nuclear Concrete for Unit 3 | 8/1/2013 | 8/2/2013 | No | No | | |
| 112 | Set Unit 2 Steam Generator | 9/9/2013 | 3/24/2014 | No | No | | Delayed 6 Months |
| 113 | Main Transformers Ready to Ship - Unit 2 | 9/30/2013 | 6/30/2013 | No | No | | 3 Months Early |

Key:

Milestones Not
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QuarterScheduled to
Be Completed
Q2-11ORS Caution
Milestone

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 114 | Complete Unit 3 Steam Generator Hydrotest at Fabricator | 2/28/2014 | 3/31/2014 | No | No | | Delayed 1 Month |
| 115 | Set Unit 2 Containment Vessel Bottom Head on Basemat Legs | 11/21/2011 | 3/29/2012 | No | No | | Delayed 4 Months |
| 116 | Set Unit 2 Pressurizer Vessel | 1/24/2014 | 8/5/2014 | No | No | | Delayed 6 Months |
| 117 | Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3 | 2/28/2015 | 3/31/2015 | No | No | | Delayed 1 Month |
| 118 | Deliver Reactor Vessel Internals to Port of Export - Unit 3 | 6/30/2015 | 9/30/2015 | No | No | | Delayed 3 Months |
| 119 | Main Transformers Fabricator Issue P.O. for Material - Unit 3 | 4/30/2014 | 4/30/2014 | No | No | | |
| 120 | Complete Welding of Unit 2 Passive Residual Heat Removal System Piping | 3/19/2014 | 9/30/2014 | No | No | | Delayed 6 Months |
| 121 | Steam Generator - Contractor Acceptance of Equipment At Port of Entry - Unit 3 | 4/30/2015 | 2/28/2015 | No | No | | 2 Months Early |
| 122 | Refueling Machine - Shipment of Equipment to Site - Unit 3 | 5/31/2014 | 5/31/2014 | No | No | | |
| 123 | Set Unit 2 Polar Crane | 4/3/2014 | 9/24/2014 | No | No | | Delayed 5 Months |

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
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Q2-11ORS Caution
Milestone

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|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 124 | Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3 | 6/30/2015 | 8/31/2015 | No | No | | Delayed 2 Months |
| 125 | Main Transformers Ready to Ship - Unit 3 | 9/30/2014 | 1/31/2015 | No | No | | Delayed 4 Months |
| 126 | Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3 | 12/31/2014 | 6/30/2014 | No | No | | 6 Months Early |
| 127 | Start Electrical Cable Pulling in Unit 2 Auxiliary Building | 12/26/2014 | 7/13/2015 | No | No | | Delayed 6 Months |
| 128 | Complete Unit 2 Reactor Coolant System Cold Hydro | 8/3/2015 | 9/1/2015 | No | No | | |
| 129 | Activate Class 1E DC Power in Unit 2 Auxiliary Building | 3/5/2015 | 12/5/2014 | No | No | | 3 Months Early |
| 130 | Complete Unit 2 Hot Functional Test | 9/21/2015 | 12/15/2015 | No | No | | Delayed 2 Months |
| 131 | Install Unit 3 Ring 3 for Containment Vessel | 7/30/2015 | 4/15/2015 | No | No | | 3 Months Early |
| 132 | Load Unit 2 Nuclear Fuel | 10/28/2015 | 3/8/2016 | No | No | | Delayed 4 Months |
| 133 | Unit 2 Substantial Completion | 4/1/2016 | 4/1/2016 | No | No | | |

Key:

Milestones Not
CompletedCompleted
Prior to Q1-11Current
QuarterScheduled to
Be Completed
Q2-11ORS Caution
Milestone

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 134 | Set Unit 3 Reactor Vessel | 10/1/2015 | 6/16/2015 | No | No | | 3 Months Early |
| 135 | Set Unit 3 Steam Generator #2 | 12/22/2015 | 10/16/2015 | No | No | | 2 Months Early |
| 136 | Set Unit 3 Pressurizer Vessel | 5/16/2016 | 3/9/2016 | No | No | | 2 Months Early |
| 137 | Complete Welding of Unit 3 Passive Residual Heat Removal System Piping | 6/20/2016 | 5/3/2016 | No | No | | 1 Month Early |
| 138 | Set Unit 3 Polar Crane | 7/18/2016 | 4/27/2016 | No | No | | 2 Months Early |
| 139 | Start Unit 3 Shield Building Roof Slab Rebar Placement | 1/16/2017 | 10/13/2016 | No | No | | 3 Months Early |
| 140 | Start Unit 3 Auxiliary Building Electrical Cable Pulling | 4/6/2017 | 2/8/2017 | No | No | | 1 Month Early |
| 141 | Activate Unit 3 Auxiliary Building Class 1E DC Power | 6/9/2017 | 7/1/2016 | No | No | | 11 Months Early |
| 142 | Complete Unit 3 Reactor Coolant System Cold Hydro | 1/1/2018 | 11/17/2017 | No | No | | 1 Month Early |
| 143 | Complete Unit 3 Hot Functional Test | 2/15/2018 | 3/8/2018 | No | No | | |

Key:

| | | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|-----------------------------------|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 144 | Complete Unit 3 Nuclear Fuel Load | 7/31/2018 | 7/12/2018 | No | No | | |
| 145 | Begin Unit 3 Full Power Operation | 10/31/2018 | 11/15/2018 | No | No | | |
| 146 | Unit 3 Substantial Completion | 1/1/2019 | 1/1/2019 | No | No | | |

Notes:

White highlighting represents Future or Historical Milestones that have not been completed.

Grey highlighting represents Future or Historical Milestones that were completed prior to the 1st Quarter 2011.

Yellow highlighting represents those Milestones that are scheduled to be or have been completed during the 1st Quarter 2011. This is based on the schedule approved by the Commission in Order No. 2010-12

Green highlighting represents Future Milestones that are scheduled to be completed in the 2nd Quarter of 2011. This is based on the schedule approved by the Commission in Order No. 2010-12

Red highlighting represents "Caution Milestones." Caution Milestones are those that are delayed by 10 months or greater.

Appendix B

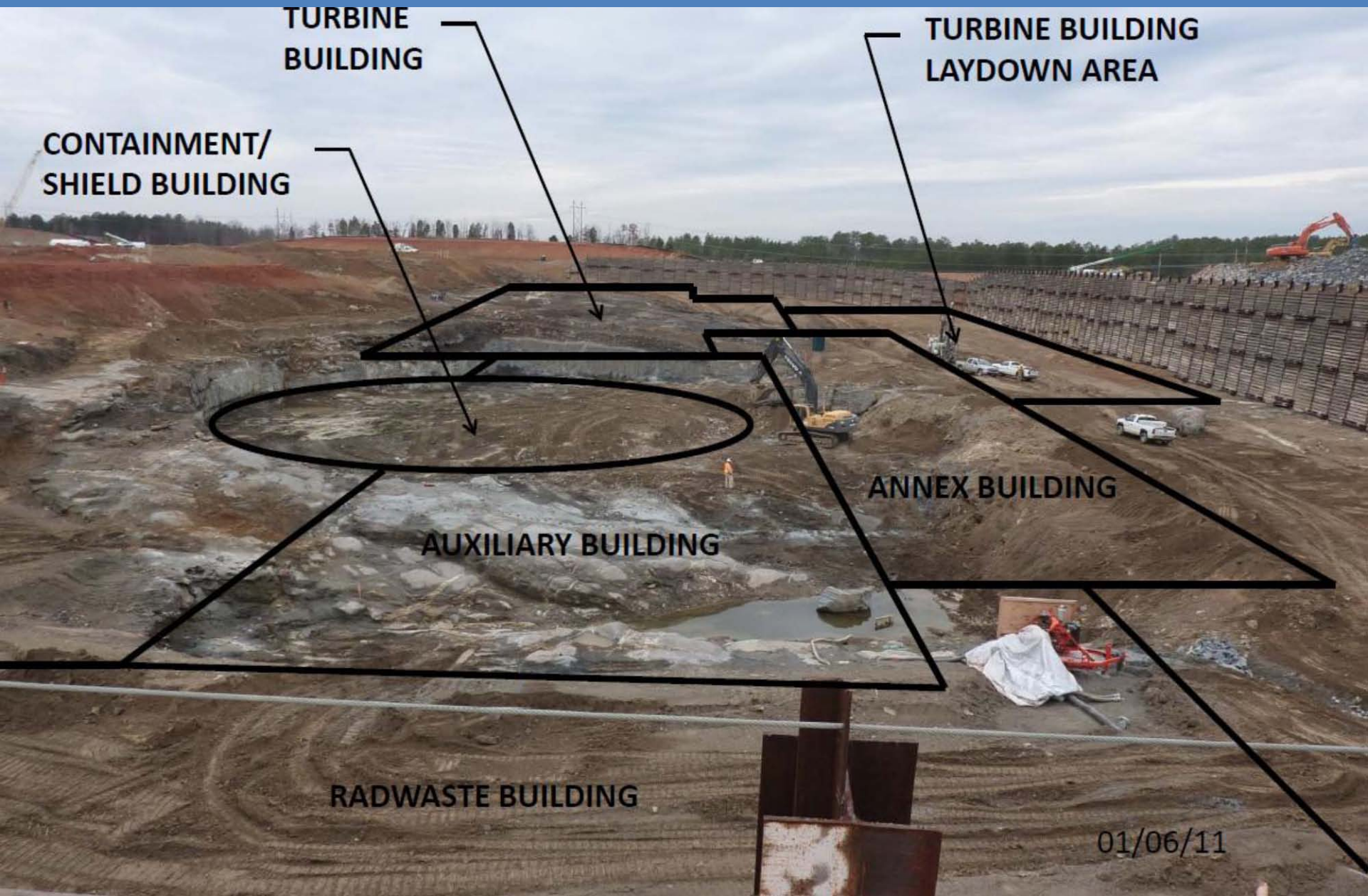
Construction Site Pictures

V.C. Summer Units 2 & 3

January 2011



Unit 2 Power Block



Unit 3 Excavation



01/25/11

Concrete Batch Plants



01/25/11

Containment Vessel Bottom Head Plates and Support Structure



Water Tanks



03/02/11

Bigge Crane Components



Appendix C

ACRS Report on Aircraft Impact Assessment



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

January 19, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**SUBJECT: REPORT ON THE SAFETY ASPECTS OF THE AIRCRAFT IMPACT
ASSESSMENT FOR THE WESTINGHOUSE ELECTRIC COMPANY AP1000
DESIGN CERTIFICATION AMENDMENT APPLICATION**

Dear Chairman Jaczko:

During the 579th meeting of the Advisory Committee on Reactor Safeguards, January 13-15, 2011, we reviewed the staff's Safety Evaluation Report (SER) on the Aircraft Impact Assessment (AIA), which is part of the Westinghouse Electric Company (WEC or the Applicant) AP1000 Design Certification Amendment (DCA) application. Our AP1000 subcommittee held meetings on November 2-3, November 17-19, and December 15-16, 2010, and reviewed the staff's SER and AIA inspection report. During these meetings, we had the benefit of discussions with representatives of the NRC staff and WEC. The AIA was made available to us by the applicant for review prior to our AP1000 subcommittee meeting of November 2-3, 2010. We also had the benefit of the documents referenced. This letter fulfills the requirement of 10 CFR 52.53 that the ACRS report on those portions of the application which concern safety.

CONCLUSION AND RECOMMENDATION

The WEC AIA for the design described in the AP1000 DCA application, as modified to resolve NRC inspection findings, complies with the requirements of 10 CFR 50.150. Analyses show that the containment remains intact following the impact of a large commercial aircraft. The reactor core remains cooled, and spent fuel pool integrity is maintained.

The staff should evaluate information and analyses presented to the ACRS, but not subjected to staff review or inspection, to determine if there is a need for further revision of the design control document (DCD), or a need for further inspections.

-2-

BACKGROUND

The results of the AP1000 AIA are a part of the AP1000 DCA application. The AP1000 design was previously certified and the existing AP1000 certification rule references DCD Revision 15. DCD Revision 18 was submitted by WEC in a letter dated December 1, 2010, and it incorporates changes in Revision 16, submitted on May 26, 2007; in Revision 17, submitted on September 22, 2008; as well as those changes made subsequent to the submittal of Revision 17, which are identified in Chapter 23 of the Advanced Final Safety Evaluation Report. We held a series of meetings with the NRC staff and the applicant on the AP1000 DCA application. We wrote a letter, dated December 13, 2010, following our review of the amendment. Our assessment of the AP1000 AIA was not included in the letter.

As required by 10 CFR 50.150, applicants for new nuclear power plants must perform an assessment of the effects of the impact of a large, commercial aircraft. Using realistic analyses, applicants must identify and incorporate into the facility those design features and functional capabilities needed to show that, with reduced use of operator action; (1) the reactor core remains cooled or the containment remains intact, and (2) spent fuel cooling or spent fuel pool integrity is maintained (referred to as the acceptance criteria). Applicants are required to submit a description of the design features and functional capabilities relied upon in the AIA and a description of how these features and capabilities ensure that the acceptance criteria are met. Since the impact of a large, commercial aircraft is a beyond-design-basis event, applicants may use non-safety-related features or capabilities to satisfy the requirements of 10 CFR 50.150.

From September 27, 2010, through October 1, 2010, the staff conducted an inspection of the WEC AP1000 AIA. Based on the results of this inspection, the staff determined that NRC requirements had not been fully met. The inspection revealed that WEC did not use realistic analyses for certain aspects of its AIA and did not fully identify and incorporate into the DCD those design features and functional capabilities credited. WEC responded to the inspection report and proposed corrective actions in its letter to the NRC dated November 12, 2010. The staff issued a letter, dated November 23, 2010, stating that the proposed corrective actions were satisfactory. The staff may review the implementation of the corrective actions during a future inspection to determine that full compliance has been achieved and maintained.

DISCUSSION

The AIA performed by the applicant uses the industry guidance in NEI 07-13, Revision 7, endorsed in Draft Regulatory Guide DG-1176. The results of the AIA show that the modified AP1000 design, described in the application, meets the acceptance criteria of the AIA rule by maintaining containment integrity and spent fuel pool integrity.

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The key AP1000 design features identified by WEC to satisfy the requirements of 10 CFR 50.150 include: presenting a small target with a reduced set of safety-related structures, systems, and components (SSCs); a redesigned shield building which protects the steel containment vessel from penetration due to impact¹; simplified, passive safety equipment for core cooling; no active equipment required for spent fuel pool cooling; and redundancy and defense-in-depth in equipment design. In accordance with 10 CFR 50.150, WEC provided an assessment in the respective technical areas of structures, reactor systems, fire, and shock.

For the structural assessment, WEC used the impulse curve supplied by the NRC and the finite element analysis code LS-DYNA. All of the aircraft strikes analyzed using this code was on the shield building. The redesigned shield building, using a modular, steel concrete composite (SC) structure, reduces passive heat removal air flow. The effects of air flow reduction on containment integrity during accidents were analyzed and shown to be acceptable. Based on the results of the assessment, WEC concluded, and the staff agreed, that both the containment and spent fuel pool remain intact and that core and spent fuel cooling are maintained.

During our November 2-3, 2010 AP1000 subcommittee meeting, we questioned whether the worst-case locations for aircraft impact had been considered. WEC addressed this issue during our November 17-19, 2010, AP1000 subcommittee meeting.

The AP1000 shield building includes a 32 ft. diameter opening in the conical roof which is an essential feature of the passive containment cooling design. This opening is surrounded by the Passive Containment Cooling System water storage tank. During our November 2-3, 2010, subcommittee meeting, issues arose concerning the potential for significant aircraft impact debris to pass through the opening and impact the steel containment vessel. WEC conducted appropriate analyses, which we reviewed during our November 17-19, 2010, subcommittee meeting. Using realistic assumptions for the impact locations of concern, these analyses demonstrated that no significant debris would impact the steel Containment Vessel (CV). In addition, WEC performed a more conservative analysis in which a large mass consisting of debris and the shield plate, was assumed to fall on the steel CV. This impact resulted in only a relatively small amount of plastic deformation and no penetration of the CV.

Our December 13, 2010, letter concerning the AP1000 DCA application describes the SC design, including the addition of tie bars between opposite faceplates of the SC modules. The spacing of these tie bars is smaller in areas of higher, out-of-plane, design basis shear demands - i.e., near discontinuities and connections - than it is in the majority of the shield building wall structure where these demands are lower. Aircraft impacts, unlike design basis events, can impart high out-of-plane shear demands in regions of the shield building wall with greater tie bar spacing. As discussed in our letter of December 13, 2010, these areas can fail in

¹ The shield building redesign is discussed in our letter dated December, 13, 2010.

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a non-ductile manner under such loads. In order to assure acceptable realism in the analyses, it must be demonstrated that the finite element models used in the AIA adequately describe this non-ductile behavior under high out-of-plane shear loads. WEC provided comparisons of the predictions of the LS-DYNA model with an experiment on a beam representing a SC structure with greater tie bar spacing under high out-of-plane shear loads. The load-deformation behavior predicted by the model agreed well with the results of the experiment; the comparison adequately supports the use of the model for these analyses.

In addition to the possibility of global structural failure, there is also a potential for local failure due to penetration by hard objects such as an engine or landing gear. The AIA analysis included comparisons of the predictions of the LS-DYNA model with penetration tests conducted in Japan on SC structures. The predictions show adequate agreement with the tests. Although the geometry of the specimens in these tests differs from that of the shield building, the comparisons support the use of the model to predict local failures associated with aircraft impact.

WEC demonstrated that AIA requirements with respect to core and spent fuel cooling are met. This is because the systems required for design basis core cooling are located inside containment, which is protected by the redesigned shield building, and there are no active systems required for cooling of spent fuel. In addition, WEC demonstrated that at least one backup water source is always available for cooling.

Similarly, for the fire aspect of AIA, based on the limited systems required for core cooling in the AP1000, and their location within the intact containment, WEC demonstrated that the requirements of 10 CFR 50.150 are met.

Finally, with regard to the effects of shock associated with aircraft impact, WEC demonstrated that these shock loadings are less than those resulting from a design basis seismic event.

The AP1000 AIA was reviewed in parallel with the development of DCD Revision 18, which was submitted on December 1, 2010. Also, the staff conducted an inspection of the AIA and resolved their findings with WEC, as described in a letter dated November 23, 2010. In parallel with these activities, we conducted subcommittee meetings to review the AIA during which WEC responded with information and analyses, some of which may not be reflected in the DCD, as revised, or within the scope of the staff's inspection. In view of these parallel activities, the staff should evaluate information and analyses presented to the ACRS, but not subjected to staff review or inspection, to determine if there is a need for further revision of the DCD, or a need for further inspections.

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The AIA for the design described in the AP1000 DCA application, as modified to resolve the staff's inspection findings, complies with the requirements of 10 CFR 50.150. Following the impact of a large commercial aircraft, the containment remains intact, the reactor core remains cooled, and spent fuel pool integrity is maintained.

Sincerely,

/RA/

Said Abdel-Khalik
Chairman

REFERENCES

1. U.S. Nuclear Regulatory Commission, "Advanced Copy of the Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design" various dates 2010 (ML103260072)
2. Letter to U.S. Nuclear Regulatory Commission, "Westinghouse Application to Amend the AP1000 Design Certification," APP-GW-GL-700, Revision 16, May 26, 2007 (ML071580757)
3. Letter to U.S. Nuclear Regulatory Commission, "Update to Westinghouse's Application to Amend the AP1000 Design Certification Rule," APP-GW-GL-700, Revision 17, September 22, 2008 (ML083220482)
4. Westinghouse Electric Company, AP1000 Design Control Document (DCD), APP-GW-GL-700, Revision 18, December 1, 2010 (ML103480059 and ML103480572)
5. NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design (NUREG-1793)" September 2004 (ML043450344, ML043450354, ML043450284, ML043450290, and ML043450274)
6. NUREG-1793, Supplement 1, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," December 2005 (ML060330557)
7. ACRS letter to the NRC Chairman on the AP1000 DCD amendment review, December 13, 2010 (ML103410351)
8. NRC Letter to WEC on "Ap1000 Pressurized Water Reactor Design Aircraft Impact Assessment Inspection, NRC Inspection Report No. 05200006/2010-203 and Notice of Violation," October 28, 2010 (ML10298058311)
9. WEC response to NRC on "Reply to Notice of Violation Cited in NRC Inspection Report No.: 05200006/2010-203 dated October 28, 2010," November 12, 2010 (ML1032104091)
10. NRC closure letter on "Westinghouse Electric Company Response To U.S. Nuclear Regulatory Commission (NRC) Inspection Report [05200006/2010-203] and Notice of Violation," November 23, 2010 (ML1032604471)

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11. NRC Letter, "Aircraft Impact Assessment for New Reactor Designs," May 17, 2007 (ML071360212)
12. NRC Letter, "Issuance of Order Imposing Safeguards Information Protection Requirements and Fingerprinting and Criminal History Records Check Requirements for Access to Safeguards Information," September 12, 2007 (ML072220401)

-6-

13. NRC Letter, "Aircraft Impact Assessment for New Reactor Designs," May 17, 2007, ML071360212
14. NRC Letter, "Issuance of Order Imposing Safeguards Information Protection Requirements and Fingerprinting and Criminal History Records Check Requirements for Access to Safeguards Information," September 12, 2007, ML072220401)

Accession No: ML110170004

Publicly Available Y

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| DATE | 01/19/11 | 01/19/11 | 01/19/11 | 01/19/11 | 01/19/11 |

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Appendix D

ACRS Report on Safety Aspects of SCE&G's COL Application



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

February 17, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: REPORT ON THE SAFETY ASPECTS OF THE SOUTH CAROLINA
ELECTRIC AND GAS COMPANY COMBINED LICENSE APPLICATION
FOR V.C. SUMMER NUCLEAR STATION, UNITS 2 AND 3

Dear Chairman Jaczko:

During the 580th meeting of the Advisory Committee on Reactor Safeguards (ACRS), February 10-12, 2011, we reviewed the NRC staff's Advanced Safety Evaluation Report (ASER) for the pending South Carolina Electric and Gas Company (SCE&G) Combined License Application (COLA) for the V.C. Summer Nuclear Station (VCSNS), Units 2 and 3. This application conforms to the design-centered review approach (DCRA).¹ The DCRA is Commission policy which allows the staff to perform one technical review and reach a decision for each COLA standard issued outside the scope of the design certification and to use this review and decision to support decisions on multiple COLAs.

The first COLA that receives a complete NRC staff review is designated as the reference COLA (RCOLA). Any subsequent application referencing the same design is designated as a subsequent COLA (SCOLA). In September 2008, the Westinghouse Electric Company (WEC) submitted Revision 17 of the design control document (DCD), describing the standard design for the AP1000 advanced pressurized water reactor. We reviewed the application and issued letter reports in December 2010 (for the DCD amendment and long-term core cooling) and in January 2011 (for the Aircraft Impact Assessment). In parallel, we reviewed Southern Nuclear Operating Company's Vogtle Electric Generating Plant (VEGP), Units 3 and 4, RCOLA and issued a letter report on January 24, 2011.

¹ The DCRA is described in Regulatory Issue Summary (RIS) 2006-06, "New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach," as endorsed by the Commission's Staff Requirements Memorandum in response to SECY-06-0187, "Semiannual Update of the Status of New Reactor Licensing Activities and Future Planning for New Reactors," dated November 16, 2006.

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The VCSNS COLA is an AP1000 SCOLA. Our AP1000 Subcommittee held two meetings (July 21-22, 2010, and January 10-11, 2011) to review various chapters of the SCOLA and the staff's ASER. During these meetings, we met with representatives of the NRC staff, SCE&G and its vendors, and with the public. We also had the benefit of the documents referenced. This report fulfills the requirement of 10 CFR 52.87 that the ACRS report on those portions of the application which concern safety.

CONCLUSIONS AND RECOMMENDATIONS

1. There is reasonable assurance that VCSNS, Units 2 and 3, can be built and operated without undue risk to the health and safety of the public. The SCOLA for VCSNS, Units 2 and 3, should be approved following its final revision.
2. Recommendations 2 through 5 in our January 24, 2011, letter concerning the VEGP, Units 3 and 4, RCOLA are also applicable to the VCSNS, Units 2 and 3, SCOLA.
3. The staff should limit the use of the current version of the HABIT code to neutral density gas dispersion modeling.

BACKGROUND

By letter dated March 27, 2008, SCE&G submitted a combined license application to the NRC for VCSNS, Units 2 and 3, in accordance with the requirements of 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." In the application, SCE&G stated that VCSNS, Units 2 and 3, would be two Westinghouse AP1000 advanced pressurized water reactor units and would be located at the existing VCSNS site.

As an AP1000 SCOLA, SCE&G has organized and annotated its application to identify: a) sections that incorporate by reference the AP1000 DCD; b) sections that are standard for COL applicants in the AP1000 RCOLA; and c) sections that are site-specific and thus only apply to VCSNS, Units 2 and 3.

DISCUSSION

Our review of the VCSNS, Units 2 and 3, SCOLA was conducted in parallel with our review of both the AP1000 Design Certification Amendment application and the VEGP, Units 3 and 4, RCOLA. As a consequence, the RCOLA and SCOLA on which the staff's ASER is based reference Revision 17 of the DCD, whereas the current version is Revision 18, and there may be a further revision prior to certification rulemaking. Similarly, the SCOLA utilizes standard content in the RCOLA which may be revised prior to approval. Since the remaining licensing steps do not provide for further ACRS review of the DCD, RCOLA, or VCSNS Units 2 and 3 SCOLA revisions that incorporate changes in design and commitments made by applicants during our reviews, the staff should review with us any changes and commitments which deviate significantly from those presented during our review.

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Since the VCSNS, Units 2 and 3, SCOLA relies on the standard information found in the RCOLA, the recommendations described in our January 24, 2011, letter concerning the VEGP, Units 3 and 4, RCOLA in the following areas are also applicable to our VCSNS, Units 2 and 3, SCOLA assessment: containment interior debris limitation, in-service inspection/ in-service testing program requirements for squib valves, power uncertainty measurement, and incorporation of DCD or COLA changes. Likewise, the discussion of site-specific probabilistic risk assessment in our January 24, 2011, letter is applicable.

The V. C. Summer Nuclear Station Site

VCSNS is located approximately 30 miles northwest of Columbia, in Jenkinsville, South Carolina. The site location is adjacent to, and elevated about 150 ft. above, the Parr Reservoir which is created by a dam on the Broad River. It is also adjacent to the Monticello Reservoir. A nearby pumped storage facility connects the two reservoirs. VCSNS Unit 1 began commercial operation in 1984. The site location relative to water courses and topography effectively precludes flooding as a hazard to the site. The expanded three-unit nuclear station, in addition to the pumped storage facility, will be served by twelve 230 kV transmission lines.

Offsite Hazards

The review of offsite hazards for VCSNS, Units 2 and 3, included toxic gas that might be released by a transportation accident on the Norfolk Southern rail line located approximately one mile from the plant. SCE&G used a public domain United States Environmental Protection Agency developed computer code, ALOHA, which treats appropriately the modeling of the dispersion of both heavy and neutral-density gases.

Analysis results using ALOHA showed that vapor cloud explosions do not pose a threat to safety-related structures, systems, and components at VCSNS, Units 2 and 3. The analysis was performed using conservative assumptions such as dispersion over flat terrain, whereas the plant is located well above possible release locations on the rail line. Shock pressures were well below 1 psi, which is considered the minimum pressure wave amplitude to cause damage. The analysis also showed that toxic vapor clouds would not lead to control room concentrations that would pose a threat to operators.

For its confirmatory calculations of toxic gas effects, the staff used the HABIT code. However, HABIT only models neutral density gas dispersion and does not consider heavy gas effects. The calculated concentrations are lower than those in the ALOHA analyses, which is to be expected in view of several postulated releases consisting of heavy gases, which disperse more slowly.

In our letter report dated September 16, 1999, we recommended that “the staff should document evidence of the validity and the capability of computer codes endorsed in regulatory guides such as the HABIT code.” During our full committee meeting on February 10, 2011, the staff stated that it is pursuing validation of some aspects of the HABIT code. We recommend that use of the current version of HABIT be limited to neutral density gas dispersion modeling.

Seismic Source Model

SCE&G used source models provided by the Electric Power Research Institute. These were updated in light of more recent data and evolving knowledge, particularly for the Charleston and New Madrid Seismic Source Zones. No modifications to the Eastern Tennessee Seismic Source Zone were required. The VCSNS, Units 2 and 3, site-specific safe shutdown earthquake (SSE) was developed in accordance with Regulatory Guide 1.208, "A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion," and information that was used in the VEGP, Units 3 and 4, Early Site Permit review and approval. Following our initial subcommittee meeting in July 2010, the seismic source information was updated.

Seismic Design Parameters

The peak ground acceleration (PGA) values for horizontal and vertical ground motions are 0.23g and 0.22g, respectively. The input seismic design ground motion response spectra (GMRS) for the SSE in the free field at plant grade exceeds the standard AP1000 certified seismic design response spectra (CSDRS) at frequencies of about 15 to 80 Hz (horizontal) and 20 to 80 Hz (vertical). However, the VCSNS site meets the AP1000 DCD criteria for a hard rock site, and the site-specific GMRS is bounded by the AP1000 hard rock high frequency spectrum. The staff concluded that the technical bases described in the AP1000 DCD were applicable to VCSNS, Units 2 and 3, for justifying that high-frequency exceedances of the AP1000 CSDRS are considered to be non-damaging.

Monitoring for Leakage from the Radioactive Waste Discharge Line

Liquid radioactive waste is diluted to below allowable offsite discharge limits by onsite blending with cooling tower blowdown. It then flows offsite through approximately one mile of high density polyethylene (HDPE) pipe downgrade to an outfall at the Parr Reservoir. Piping connections at the onsite blending location will be accessible for inspection, but the downstream portion of the line will be buried along a rail spur and will not be readily accessible for inspection.

Although this material has excellent properties and is acceptable for its intended service, operating experience in nuclear power plants is limited. Localized lack of fusion can occur during the joining of HDPE piping segments in the field. Such defects, if not detected by initial inspection and hydrostatic testing and repaired, can propagate through the pipe wall by slow crack growth. Since many joints will be formed in the field with no provision to inspect them using volumetric (UT) methods, undetected defects may grow and cause leaks during the 60-year service life of the pipe.

Monitoring wells will be relied upon as the only method for detecting groundwater contamination. SCE&G's groundwater monitoring program should be designed to provide for early detection of any leaks that develop in the HDPE waste water discharge line. The monitoring wells should detect contamination close to the pipe along its entire run, before it becomes widespread, and well before compliance with 10 CFR 20.1406 is challenged.

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Deviation from RCOLA Standard Approach

As compared to the VEGP RCOLA, the VCSNS, Units 2 and 3, SCOLA included only one additional departure or exemption of note from the DCD. There is a slight increase in the maximum, safety, non-coincident wet bulb temperature of 1.2°F above the AP1000 DCD value of 86.1°F. The effects of this increase were evaluated by the staff and determined to be acceptable.

In summary, we agree with the staff's conclusions as documented in the staff's ASER regarding the safety issues associated with the SCE&G COLA for VCSNS, Units 2 and 3. We conclude that there is reasonable assurance that VCSNS, Units 2 and 3, can be built and operated without undue risk to the health and safety of the public. The SCE&G COLA for VCSNS, Units 2 and 3, should be approved following its final revision.

Sincerely,

/RA/

Said Abdel-Khalik
Chairman

REFERENCES

1. Southern Carolina Electric and Gas Company (SCE&G) Letter, "Combined License Application for V.C. Summer Nuclear Station Units 2 and 3," dated March 27, 2008 (ML081300460)
2. SCE&G Letter, "Combined License Application for V.C. Summer Nuclear Station Units 2 and 3," Revision 2, dated January 28, 2010 (ML100350739) (Rev. 2 was used as the basis for the staff's ASER)

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3. During the course of ACRS review, the staff provided the following ASER chapters:

| Chapter | Chapter Title | Transmittal Memo to ACRS (Accession Numbers) | ASER (Accession Numbers) |
|---------------------|--|--|---|
| 1 | Introduction and Interfaces | ML101550427 | ML101370358 |
| 2 | Site Characteristics (without Hydrology) | ML101550273 | ML101390008 |
| | Section 2.4 (Hydrology) | ML102450029 | ML102140255 |
| 3 | Design of Structures, Components, Equipment, and Systems | ML101550236 | ML103070512 |
| 4 | Reactor | ML101450515 | ML100621218 |
| 5 | Reactor Coolant System and Connected Systems | ML101550558 | ML100670055 |
| 6 | Engineered Safety Features | ML102080334 | ML102980694 |
| 7 | Instrumentation and Controls | ML101540411 | ML101370712 |
| 8 | Electric Power | ML101540620 | ML102370262 |
| 9 | Auxiliary Systems | ML101540643 | ML102670044 |
| 10 | Steam and Power Conversion Systems | ML101450456 | ML101020031 |
| 11 | Radioactive Waste Management | ML101550661 | ML100700102 |
| 12 | Radiation Protection | ML101550687 | ML101820007 |
| 13 | Conduct of Operations (without Emergency Planning) | ML103200058 | ML100840174 |
| | Section 13.3 (Emergency Planning) | ML101550691 | ML102020681 |
| 14 | Initial Test Programs | ML101550695 | ML102660181 |
| 15 | Accident Analysis | ML101550697 | ML103070532 |
| 16 | Technical Specifications | ML101550699 | ML101890864 |
| 17 | Quality Assurance | ML101550701 | ML101890606 |
| 18 | Human Factors Engineering | ML101550703 | ML101250016 |
| 19 | Probabilistic Risk Assessment | ML103010338 | ML102950269 |
| 19 Appendix 19.A | Loss of Large Areas of the Plant due to Explosions or Fires (LOLA) | ML101590342 | Public Version ML103350636 Non-Public Version ML103370008 |
| Appendix A | License Conditions, ITAAC, and FSAR Commitments | ML101550427 | ML103360056 |

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4. ACRS Letter, "Report on the Final Safety Evaluation Report Associated with the Amendment to the AP1000 Design Control Document," dated December 13, 2010 (ML103410351)
5. ACRS Letter, "Long-Term Core Cooling for the Westinghouse AP1000 Pressurized Water Reactor," dated December 20, 2010 (ML103410348)
6. ACRS Letter, "Report on the Safety Aspects of the Southern Nuclear Operating Company Combined License Application for Vogtle Electric Generating Plant, Units 3 and 4," January 24, 2011 (ML110170006)

Accession No: **ML110450490** Publicly Available Y Sensitive N

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| DATE | 02/17/11 | 02/17/11 | 02/17/11 | 02/17/11 | 02/17/11 |

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Appendix E

SCE&G Letter to the Commission on Community Outreach Costs



K. Chad Burgess
Associate General Counsel

chad.burgess@scana.com

April 25, 2011

VIA ELECTRONIC FILING

The Honorable Jocelyn G. Boyd
Chief Clerk/Administrator
Public Service Commission of South Carolina
101 Executive Center Drive (29210)
Post Office Drawer 11649
Columbia, South Carolina 29211

RE: Petition of South Carolina Electric & Gas Company for Updates and Revisions to
Schedules Related to the Construction of a Nuclear Base Load Generation Facility
at Jenkinsville, South Carolina
Docket No. 2010-376-E

Dear Ms. Boyd:

Subsequent to the hearing in this matter, the South Carolina Office of Regulatory Staff ("ORS") raised with South Carolina Electric & Gas Company ("SCE&G") concerns about the scope of work entitled "Community Support/Outreach" that was one of the scopes of work that was transferred from the Target Price Cost categories to the Firm with Indexed Adjustment cost category as a result of Change Order No. 8 to the Engineering, Procurement and Construction Agreement between SCE&G and Westinghouse/Shaw. In light of the relatively small amount of money involved, and in the interest of compromise, SCE&G has agreed with ORS that SCE&G will voluntarily agree not to include costs associated with this scope of work in future revised rates filings.

This agreement is being made in reliance on Section 58-33-280(B) of the Base Load Review Act which gives utilities the discretion to include less than all costs in such filings. This agreement is intended to resolve any concerns related to these costs.

By copy of this letter, we are notifying the parties of record of this agreement.

(Continued . . .)

The Honorable Jocelyn G. Boyd
April 25, 2011
Page 2

If you have any questions, please advise.

Very truly yours,



K. Chad Burgess

KCB/kms

cc: Nanette S. Edwards, Esquire
Jeffrey M. Nelson, Esquire
Debra Sherman Tedeschi, Esquire
Damon E. Xenopoulos, Esquire
Scott Elliott, Esquire
John Flitter
(all via electronic mail and U.S. First Class Mail)

Appendix F

NRC and WEC Correspondence Regarding Review of AP1000



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, D.C. 20555-0001

E-mail: opa.resource@nrc.gov Site: www.nrc.gov

Blog: <http://public-blog.nrc-gateway.gov>

No. 11-087

May 20, 2011

NRC CHAIRMAN GREGORY B. JACZKO'S STATEMENT ON AP1000 REVIEW ISSUES

The Nuclear Regulatory Commission's efforts to confirm its review of Westinghouse's amended AP1000 reactor design have resulted in the uncovering of additional technical issues. The NRC will always place its commitment to public safety and a transparent process before any other considerations; Westinghouse must resolve the issues before we can consider finalizing NRC certification of the design. The agency will determine what impact this effort may have on the schedule for the AP1000 design amendment and related license application reviews after the staff examines the company's response on these matters.

When the Commission approved issuance of the proposed certification rule earlier this year, the rule language noted the need for what, at the time, were additional calculations to confirm the staff's technical analysis. That work has led to more questions regarding the AP1000's shield building, as well as the peak accident pressures expected within containment. The agency has made it clear to Westinghouse that it must prove to our satisfaction that the company has appropriately and completely documented the adequacy of the design. NRC staff will examine Westinghouse's quality assurance and corrective actions programs as part of an inspection next week, and we expect the company will submit additional information early next month.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

News Releases

Westinghouse Clarifies Facts Regarding NRC Statements on AP1000

- **Believes statements about discovery and severity of issues are being misinterpreted**
- **Emphasizes high level of testing, analysis and independent endorsements**
- **Will work with NRC and remains confident of final approvals this fall**

PITTSBURGH, May 26, 2011 /PRNewswire/ -- Officials of Westinghouse Electric Company today said they are disappointed that recent U.S. NRC statements regarding the discovery of new issues relating to the approval of design amendments for the AP1000® nuclear power plant are being misinterpreted and sensationalized.

The company also said the NRC statements, including a news release issued May 20, do not reflect Westinghouse's transparent and cooperative approach to the handling of the discovery and severity of the few remaining issues that need to be resolved before receiving approval from the NRC.

"The AP1000 nuclear energy plant is a highly robust and safe plant that has undergone an extremely intensive series of tests and reviews by the NRC, the independent Advisory Committee on Reactor Safeguards, university experts and numerous other independent third parties," said Ric Perez, president of Operations for the company. "The AP1000 is very likely the most closely scrutinized nuclear energy plant in history, now having undergone several years of exhaustive system and component testing, public debates, design reviews and multi-national regulatory oversight. We are confident that it is extremely safe."

The company is aware of only three issues remaining to be validated, none of which are safety significant. The issues involve the final submittal of confirmatory calculation in the areas described below. All three issues have undergone preliminary analyses which have been seen by the NRC for familiarity and clarity. All preliminary analyses results support the positions and bases taken by the staff in their advanced safety evaluation made in February 2011. None of the three issues is anticipated to lead to any design change in the plant as submitted by Westinghouse in December 2010 (DCD-18).

- In December 2010, the NRC and Westinghouse agreed that containment vessel internal pressure calculation would need to be revised. It was determined late in April that documentation of the calculation was required prior to the design certification amendment. The revised calculation will be reviewed with the NRC in a public forum on June 2.
- In April 2011, the NRC challenged the analytical guidelines used by Westinghouse in its comprehensive Shield Building Design Report submitted in May 2010. Specifically, the NRC challenged the position that climatic thermal loads (e.g. sunshine) need not be combined with seismic loads in structural design calculations due to their small impact and based on prior U.S. building code practice. Westinghouse disagreed with the NRC position that the load combination was a strict code compliance issue due to the shield building's steel-composite structure and clear treatment in the design report. Nevertheless, Westinghouse agreed to perform the detailed load combination calculations to provide additional assurances to the NRC. To date, Westinghouse has completed preliminary calculations which, as expected, require no change to the shield building design. This information was presented to the NRC during a public meeting last week.

- The third issue relates to what design model was used for the design of the passive containment cooling system (PCS) tank. There are two technically acceptable models but each treat differently the hydrodynamic forces from water in the tank. The May 2010 Shield Building Design Report references the specific model to be used for each structure contacting the PCS tank. However, during the confirmatory work on loads discussed above, Westinghouse self-identified that it did not use the specific model outputs for one corner structure of the tank. The specific model loads and structural analysis have now been used, and Westinghouse is working to verify preliminary conclusions that indicate that there is no reason to change the tank design.

While Westinghouse strongly believes that safety is the utmost priority and that a transparent review process involving the public is critical, it also believes that it has already proven to the NRC that the AP1000 pressurized water reactor is a highly robust design that will take nuclear safety to an even higher level. In any case, the company has pledged to work cooperatively and transparently with the NRC to address any outstanding technical issues.

"We have defended openly our claims of safety for the past six years, starting with the original design certification of the AP1000. We have always reiterated to the staff that getting things right is our first priority. Our behaviors towards these last few issues continue to reinforce that practice." Mr. Perez said. "We are confident that we will resolve any legitimate and objective concerns and receive final approval of the design amendments as planned this fall."

Westinghouse Electric Company, a group company of Toshiba Corporation (TKY:6502), is the world's pioneering nuclear energy company and is a leading supplier of nuclear plant products and technologies to utilities throughout the world. Westinghouse supplied the world's first pressurized water reactor in 1957 in Shippingport, Pa. Today, Westinghouse technology is the basis for approximately one-half of the world's operating nuclear plants, including 60 percent of those in the United States.

www.westinghousenuclear.com

SOURCE Westinghouse Electric Company



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 31, 2011

*****FOR THE RECORD*****

**NRC CHAIRMAN GREGORY B. JACZKO'S STATEMENT ON
NRC'S COMMITMENT TO SAFETY**

The tragic events in Japan have understandably shined a brighter spotlight on the safety of nuclear power in the United States and on the role and actions of the U.S. Nuclear Regulatory Commission. As public servants, we pride ourselves on our transparency and openness and welcome the constructive dialogue about ensuring the facilities we license are operated safely and securely.

For more than six years I have served as a Commissioner and now Chairman of this independent federal government agency and I have personally seen the tremendous job the NRC staff does. Our employees are dedicated public servants who come to work every day to do one thing - ensure that nuclear power plants and nuclear materials are safe and secure. Most of our 4,000 employees make this a lifetime endeavor.

In the last several weeks, however, a skewed picture of the NRC has been painted in some stories -- one of missed opportunities and delayed enforcement suggesting an ineffectual regulator. Nothing could be further from the reality. Here are examples that demonstrate why I strongly disagree with these recent accounts.

First, about 18 months ago the NRC staff acted to resolve a significant design concern they identified with the Westinghouse AP1000 reactor design, proposed for construction in Georgia. This is a multi-billion dollar project, but the NRC's effort and focus has been on determining if the design meets our stringent safety requirements and at one point our staff experts determined that it did not. Consistent with our focus on safety the NRC experts told the plant designer that changes were needed or the staff would not approve the design. It was as simple as that. Because of forceful NRC action, the vendor made significant improvements. This took place in full view of the public, including a dissenting opinion by one of our staff members. Despite this transparency, there was little public recognition that this highlighted the NRC's commitment to safety.

Second, also little noticed was our work on the reactor vessel head, the lid of the metal structure that holds the nuclear fuel, of a plant in Ohio known as Davis Besse. Last year, the licensee identified problems with the interim replacement head. The NRC immediately studied the safety significance of this defective component and made certain the plant owner did the

right thing. Far from being a passive regulator, the agency demanded the plant owner accelerate replacement of the component years before the owner wanted to do so. Although this decision requires considerable cost on the part of plant owner, that had no bearing for the NRC safety experts. They simply put safety above all else, just as they had done in the case of the AP1000 reactor design. This is another example of the agency doing the right thing - something routine for the NRC staff. But unfortunately this attracted limited media attention.

Third, during our Japan nuclear incident response, I approved a courageous safety recommendation by our most senior, expert staffers. As we were monitoring the fluid situation in Japan, NRC staff became concerned that the situation could worsen and impact Americans living there. Using all of their training, the best available data, and centuries of combined nuclear safety experience, the staff recommended to me that we needed to advise American citizens to stay fifty miles away from the troubled nuclear site, recommendations that differed from the advice of the Japanese government. The staff did not focus on what might be popular with the nuclear industry but instead recommended action in the best interest of safety.

These three examples are just a few of the many ways the NRC staff works day-in and day-out to make sure nuclear power plants and nuclear materials will not cause harm to the public. I could fill the entire newspaper with just a fraction of the proactive safety measures taken by the staff in the last year. Yet as with most of our safety actions, these examples received little public attention.

Of course, we are not perfect. There are things we can do better. Among them is the need to better enforce our regulations designed to protect against the risk of fires at nuclear power plants, something the Commission continues to publicly debate. We are always striving to learn lessons and we will look to the tragedy in Japan to improve our programs, even though this event involved no U.S. nuclear facilities. In fact, just 12 days into the Japan incident the Commission created a task force to look at improvements to our regulations and oversight programs. That task force has already participated in one public meeting and is working systematically and methodically to make recommendations by July.

Ensuring nuclear safety is always challenging. We cannot guarantee the prevention of every possible accident and we seem to only make news when there are issues. But that is precisely our job – to find problems and ensure they are resolved. The knowledge that the dedicated women and men of the NRC are there to advise me and my colleagues on the Commission leaves me confident in our ability to continue to successfully protect the health and safety of the American people.

Appendix G

NRC Press Release Regarding the Completion of the FEIS



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs

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Blog: <http://public-blog.nrc-gateway.gov>

No. 11-067

April 19, 2011

NRC, U.S. ARMY CORPS OF ENGINEERS ISSUE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR NEW REACTORS AT VIRGIL C. SUMMER SITE

The Nuclear Regulatory Commission and the U.S. Army Corps of Engineers (USACE), Charleston District, have completed the Final Environmental Impact Statement (FEIS) for the Combined Licenses (COL) for the proposed Summer Units 2 and 3 reactors. The NRC concludes in the FEIS that there are no environmental impacts that would preclude issuing the COLs for construction and operation of the proposed reactors at the site, near Jenkinsville, S.C. USACE will use the information in the FEIS in making its federal permit decision in accordance with the Clean Water Act and Rivers and Harbors Act of 1899.

The FEIS will be available on the NRC website at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1939/>. The NRC staff, in cooperation with USACE, began its environmental review with a scoping process that included public meetings near the site in January 2009. The staff issued a draft EIS for the proposed COLs in April 2010 and held public meetings in May 2010 to gather comments on the draft EIS.

The FEIS, with the NRC's conclusions, is also available via the NRC's electronic document database, ADAMS, by entering accession numbers ML11098A044 and ML11098A057 in the ADAMS search engine at: <http://wba.nrc.gov:8080/ves>. In addition, the Fairfield County Library, at 300 Washington St. in Winnsboro, S.C., will have a hardbound copy of the FEIS available for public inspection.

The NRC's publishing of the FEIS is only part of the overall Summer COL review. The agency staff continues to compile its final safety evaluation report (SER), which will include recommendations from the NRC's Advisory Committee on Reactor Safeguards, an independent group of nuclear safety experts. The NRC's final licensing decision will be based on the FEIS and SER findings, along with a ruling from the five-member Commission that heads the agency.

The applicants, South Carolina Electric & Gas (SCE&G) and Santee Cooper, are applying for licenses to build and operate two Westinghouse AP1000 reactors adjacent to the existing Summer nuclear power plant, approximately 26 miles northwest of Columbia, S.C. The companies submitted the application March 27, 2008, and supplemented the application's environmental report to support their request on Feb. 13, 2009, and July 2, 2010. The AP1000 is a 1,100 MWe pressurized-water reactor design the NRC certified in 2006. The agency is

currently reviewing Westinghouse's May 2007 application to amend the certified design. More information regarding the review is available on the NRC's website at:
<http://www.nrc.gov/reactors/new-reactors/design-cert/amended-ap1000.html>.

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News releases are available through a free *listserv* subscription at the following Web address:
<http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

Appendix H

WEC Letter to the NRC Confirming Submission of the DCD Rev. 19



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Your ref: Docket No. 52-006
Our ref: DCP_NRC_003177

June 13, 2011

**Subject: Westinghouse Electric Company - Updated Application to Amend the
AP1000® Nuclear Power Plant Design Certification Rule**

Westinghouse Electric Company is pleased to submit an updated application to amend the AP1000® Design Certification Rule (10 CFR 52 Appendix D). This application update is based on the *AP1000* Design Control Document (DCD) Revision 19, and includes necessary changes to address NRC comments raised during the confirmatory review of prior updates submitted in DCD Revision 18. Westinghouse letter dated May 26, 2007 submitted the application to amend the *AP1000* Design Certification, which was updated by Westinghouse letters dated September 22, 2008 and December 1, 2010.

This submittal, along with updated Shield Building and Containment Vessel technical reports being provided to the NRC separately, provides the resolution of all known NRC open confirmatory items associated with the pending Final Safety Evaluation Report needed for final rule making.

The changes incorporated into DCD Revision 19 are clarifications and minor corrections. Compared to Revision 18, there are no design changes in Revision 19. The clarifications and minor corrections contained in Revision 19 have no safety significance. Hence, the changes do not warrant an additional public comment period. Westinghouse notes that the NRC has already convened public meetings associated with its review of the changes, and thus the public already has had the opportunity to comment.

This letter and its enclosures provide the prescribed information pursuant to 10 CFR 52. As part of DCD Revision 19, Westinghouse has included a "roadmap" that identifies the appropriate 10 CFR 52.63(a)(1) criteria that justify inclusion of the updated information in DCD Revision 19.

The two enclosures contain the electronic files, pursuant to 10 CFR 50.30(b), providing "AP1000 Design Control Document", Revision 19, for the application under Oath of Affirmation (Attachment I).

- Enclosure 1, APP-GW-GL-700, contains sensitive unclassified non-safeguards information relative to the physical protection of an *AP1000* Nuclear Plant that should be withheld from public disclosure pursuant to 10 CFR 2.390(d).
- Enclosure 2, APP-GW-GL-702, is the redacted version of Enclosure 1.

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The files for the two versions are provided on separate CD-ROMS to facilitate handling by the Document Control Desk. The files and directory structure on the CD-ROMS are intended to satisfy the NRC requirements for electronic submittals.

The "AP1000 Design Control Document" was prepared in accordance with the Westinghouse Quality Management System (QMS) as approved by the NRC. The Westinghouse QMS includes specific procedures for design configuration management, licensing basis configuration management and corrective action processes.

Recognizing the importance of ensuring the quality of the DCD, Westinghouse has performed the following actions to provide assurances of the correctness of the DCD. Specifically, the following actions have been taken:

- Westinghouse performed a systematic assessment of *AP1000* design finalization activities that are in-process to provide assurance that known future design activities would not have a material impact on the DCD or the NRC safety review of the DCD. (Note: Design finalization activities refers to development of detailed design documents needed for procurement and fabrication documents – not for licensing purposes. However, in the course of design finalization, there are occasions where design changes are identified, for example, to enhance the design for operability, constructability or supply base availability. All design changes are evaluated for licensing impact and reportability.)
- Westinghouse performed a systematic assessment of applicable open items in the Westinghouse Corrective Action database to provide assurance that there would be no material impact on the DCD or the NRC safety evaluation.
- Westinghouse performed a systematic assessment of applicable open Part 21 evaluations to provide assurance that there would be no material impact on the DCD or the NRC safety evaluation.

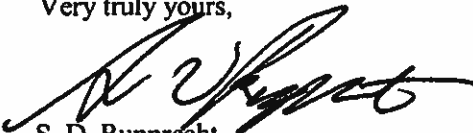
In addition, the AP1000 Design Center Working Group (DCWG) performed an independent audit and assessment of Westinghouse in-process design activities, corrective action items, and finalized calculation documents to provide additional assurances. The DCWG oversight did not identify any issue that would prevent issuance of DCD Revision 19.

Based on the results from these oversight and assessment activities, the "AP1000 Design Control Document", Revision 19 is ready for docketing in support of final rulemaking.

Westinghouse is ready and willing to discuss the actions listed above with the NRC and looks forward to continued NRC progress on the amendment to the *AP1000* Design Certification Rule, as well as the NRC Final Safety Evaluation Report.

Please direct any questions related to this amendment application to R. F. Ziesing, Director, U.S. Licensing at 412-374-2035.

Very truly yours,



S. D. Rupprecht
Vice President
AP1000 Product Delivery Systems

/Attachment

1. "Oath of Affirmation," dated June 13, 2011

/Enclosures

1. CD-ROM Containing APP-GW-GL-700, AP1000 Design Control Document, Revision 19, Sensitive Version
2. CD-ROM Containing APP-GW-GL-702, AP1000 Design Control Document, Revision 19, Public Version

cc: E. McKenna - U.S. NRC
P. Buckberg - U.S. NRC
R. Joshi - U.S. NRC
T. Spink - TVA
P. Hastings - Duke Energy
R. Kitchen - Progress Energy
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A. Monroe - SCANA
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